

**STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
PUBLIC UTILITIES COMMISSION**

**In Re: The Narragansett Electric Company
d/b/a National Grid
Annual Energy Efficiency Plan for 2020**

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|
| Docket No. _____
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ANNUAL ENERGY EFFICIENCY PLAN FOR 2020

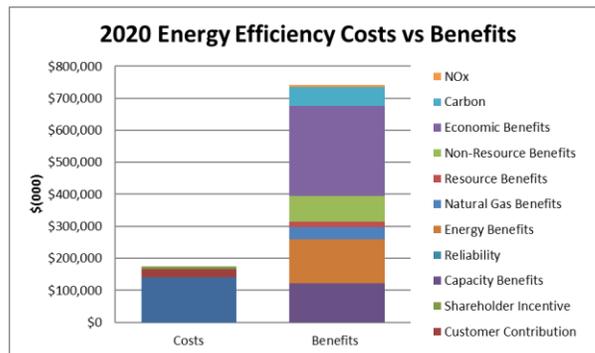
SETTLEMENT OF THE PARTIES

October 15, 2019

Executive Summary

National Grid’s 2020 Annual Energy Efficiency Plan (2020 Plan or Plan) includes a suite of services to provide all customers with the tools needed to take control of their energy usage and lower their bills. In addition to lowering costs to customers that participate in the Company’s energy efficiency programs, energy savings from the Plan will help to displace electricity generation and avoid investments in the installation, upgrade, or replacement of transmission and distribution infrastructure, which in turn provides cost savings to all customers, including customers who do not directly participate in these programs. As noted in the 2020 Bill Impact analysis included in Attachment 7 of this Plan, over the lifetime of the 2020 programs, the average Rhode Island customer’s bill will be less than if there were no energy efficiency programs.

The Plan will create significant benefits to Rhode Island. The Plan will save 5,175,928 lifetime MMBTu, which includes 173,322 MWh, over the lifetime of installed electric and delivered fuels energy efficiency measures and 4,705,432 lifetime MMBtu over the lifetime of



installed natural gas measures. Investments made in energy efficiency to achieve these savings will add \$ 280.6 million to Rhode Island’s state gross domestic product (GDP). Supporting these savings goals in 2020 is the Company’s commitment to support the State’s ongoing decarbonization of heating efforts through expanded investments in air source heat pump market transformation efforts and driving customer adoption of these technologies.

The projected lifetime energy savings from this Plan will also avoid 1.03 million tons of carbon, the equivalent of removing 199,718 passenger vehicles from the road for one year. In total, the 2020 Plan is expected to create over \$746 million in benefits over the life of the installed electric, demand response, and natural gas energy efficiency measures. Energy savings and benefits are measured and verified by third-party evaluation firms.

The Plan represents the third year of the 2018-2020 Three-Year Plan. In this context, the Plan includes several enhancements over previous years, while also continuing proven, nation-leading customer services. Specifically, The Company has developed new

customer engagement strategies, a more aggressive approach to decarbonization of heat, and the utilization of new online tools to offer even more value to customers. Further, this plan was the product of an even more robust stakeholder engagement process than in prior years. Beginning in March 2019, members of the Energy Efficiency Technical Working Group¹ gave presentations² on their priorities for the 2020 Plan, and the Company provided a Plan Outline Memorandum in June. The Company believes that its commitment to stakeholder engagement in 2019 has aided in the creation of a holistic and innovative 2020 Plan that is responsive to customer needs.

The Plan demonstrates National Grid’s commitment to energy efficiency and customer energy management and balances pursuing energy and cost savings from current technologies and programs while also identifying new technologies and programs to continue delivering savings to Rhode Island customers for years to come.

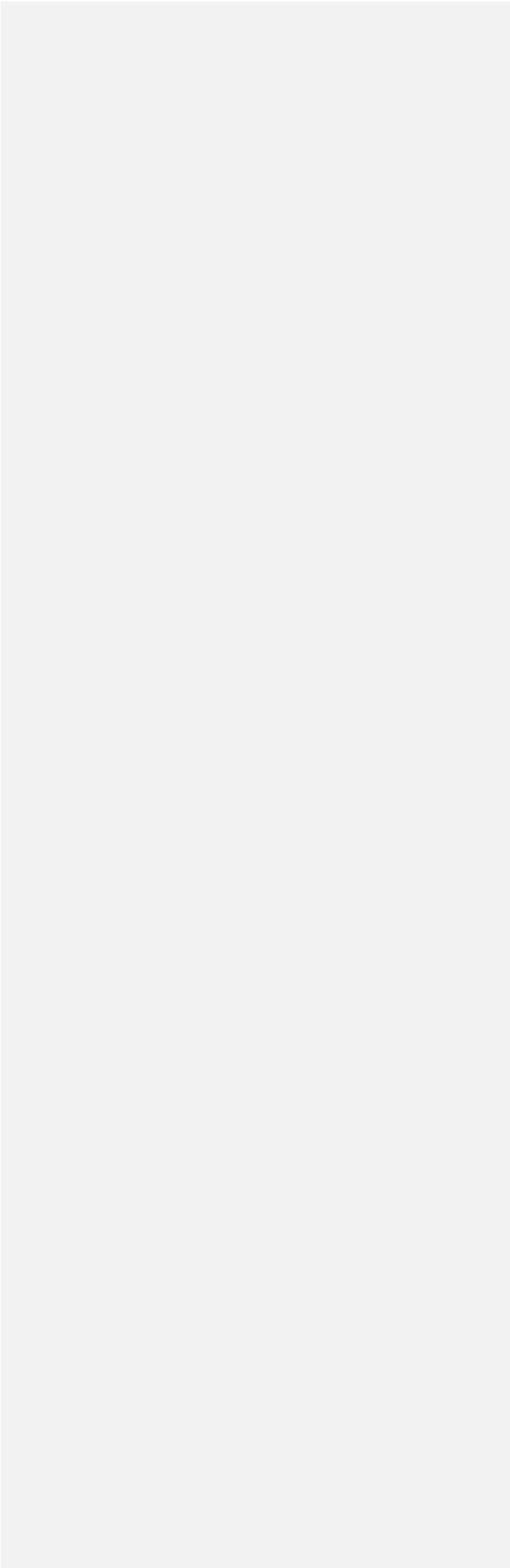
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¹ Previously called the “Collaborative”

²² Please see the Sec.1 “Introduction and Summary” for more information on the stakeholder engagement process in 2019.

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ATTACHMENTS

1. 2020 Residential Energy Efficiency Solutions and Programs
2. 2020 Commercial and Industrial (C&I) Energy Efficiency Solutions and Programs
3. 2020 Measurement and Verification Plan
4. Rhode Island Benefit Cost Test Description
5. 2020 Electric Energy Efficiency Program Tables
6. 2020 Gas Energy Efficiency Program Tables
7. 2020 Energy Efficiency Program Plan Bill Impacts
8. 2020 Energy Efficiency Pilots Summary
9. 2020 Cross-Program Summary
10. Energy Efficiency Definitions

Commented [RJ1]: Will be shared with 3rd draft

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1. Introduction and Summary

The Narragansett Electric Company d/b/a National Grid (National Grid or Company) is pleased to submit this 2020 Annual Energy Efficiency Plan (Annual Plan or Plan) to the Rhode Island Public Utilities Commission (PUC). This Plan has been developed by National Grid in collaboration with the Energy Efficiency Collaborative (Collaborative) and has been endorsed by the Energy Efficiency and Resource Management Council (EERMC).³

This Plan is submitted in accordance with the Least Cost Procurement law, R.I. Gen. Laws § 39-1-27.7, the basis for which is the Comprehensive Energy Conservation, Efficiency, and Affordability Act of 2006, R.I. Gen. Laws § 39-2-1.2, and the Least Cost Procurement Standards (Standards), as approved by the PUC at an Open Meeting on September 6, 2018 in Docket 4684. This Plan is being jointly submitted as a Stipulation and Settlement, entered into by the Rhode Island Division of Public Utilities and Carriers (Division), the Office of Energy Resources (OER), the EERMC, Acadia Center, Green Energy Consumers Alliance, and National Grid (collectively, the Parties), and addresses issues raised by members of the public, members of the Collaborative, and the EERMC concerning the Company's electric and natural gas energy efficiency (EE) programs for calendar year 2020.

During the 2020 Annual Planning season, stakeholder engagement was a top priority for the Company. Early in 2019, the Company created a new website for the Energy Efficiency Technical Working Group (Working Group), the monthly gathering of stakeholders formerly known as The Collaborative, in order to post the location and agendas for upcoming meetings and engage more public interaction. Feedback from these meetings were reported to the EERMC by the EERMC consulting team to ensure the EERMC was aware of current discussions.

To ensure a wide array of views and customer representation, the Company made several adjustments to the planning schedule. Notably, in April and May of 2019, stakeholders presented on their organization's or constituents' priorities for inclusion in the Annual Plan and invited new members to attend meetings for balanced and helpful feedback. In

³ Since 1991, a collaborative group has been meeting regularly to analyze and inform the Company's electric and gas energy efficiency programs. The name of this group was modified in 2019 to the Energy Efficiency Technical Working Group to better reflect the roles of the parties. Presently, members of the Working group include: the Company, the Division and the Division's consultant, Synapse Energy Economics (Synapse), The City of Providence, Green Energy Consumers Alliance, TEC-RI, the Office of Energy Resources, and Acadia Center. In addition, the George Wiley Center, The Center for Justice, the Rhode Island Infrastructure Bank (RIIB), , and several EERMC members and representatives from the EERMC's Consulting Team participate in the Working group. Since 1991, membership in the Working Group has varied because some organizations have withdrawn and others have joined. Further information available at: www.ngrid.com/eetechgroup

total over 107 priorities were put forward and influenced the subsequent Plan Outline and drafts of the Plan. Moreover, the schedule for review of the Plan was moved up to provide more time for external review and to incorporate suggestions. Some of these schedule adjustments include:

- Creating a Plan Outline Memorandum that provides insights into the areas of focus for the upcoming Plan.
- Sending the first draft of the Plan to stakeholders one month earlier, on July 16th, instead of the traditional mid-August date.
- Adding a second draft on August 23rd to incorporate stakeholder feedback from the first draft into the text.

The result of the above stakeholder process is the Plan that is presented in this document and attachments. The Plan satisfies the statutory requirements for Least Cost Procurement and is consistent with the Three-Year Energy Efficiency Procurement Plan (Three-Year Plan) for 2018-2020.⁴ The Annual Plan is cost-effective and has a cost that is lower than the cost of energy supply for both electricity and natural gas, satisfying the requirements prescribed in R.I. Gen. Laws § 39-1-27.7 (a)(2) and the Standards. The Plan also satisfies PUC Order No. 22851 by demonstrating how it advances the Docket 4600 principles and goals for the electric system detailed in Section 11.⁵

The primary goal of the Plan is to create energy and economic cost savings for Rhode Island consumers through energy efficiency, as required by R.I. Gen. Laws § 39-1-27.7. To that end, the Plan will create electric and delivered fuels savings of 173,322 Annual MWhs and 5,175,928 lifetime MMBtus, and natural gas savings of 436,981 Annual MMBtus and 4,705,432 lifetime MMBtus. The Plan will generate benefits of more than \$746 million over the life of the measures (with \$605 million in benefits coming from electric and delivered fuels efficiency and demand response, and \$141 million in benefits from natural gas efficiency), which represents a large and urgently needed benefit for Rhode Island's residential, commercial, industrial, and income eligible energy customers. Table 1 provides a high level summary of the Plan.

Table 1: 2020 Energy Efficiency Program Plan Summary

⁴ The Company submitted the Three-Year Plan to the PUC on August 30, 2017 in Docket 4684.

⁵ PUC Report and Order No. 22851 accepting the Stakeholder Report. Written Order issued July 31, 2017.

Table 1: 2020 Energy Efficiency Program Plan Summary

Electric Programs by Sector	Implementation Spending (\$000)	Customer Contribution (\$000)	Annual Savings (MWh)	Lifetime Savings (MWh)	Lifetime Savings (MMBtu)	¢/lifetime kWh	Summer Annual Demand Savings (kW)	Demand Response (kW)	Total Benefits (\$000)	RI Test B/C Ratio	Participants
Non-Income Eligible Residential	\$45,075	-\$779	76,206	328,861	1,613,789	13.5	11,245	1,746	\$147,374	3.17	76,206
Income Eligible Residential	\$15,979	\$0	5,794	67,963	494,656	23.5	1,001		\$46,128	2.75	5,794
Commercial and Industrial	\$45,734	\$17,570	91,321	1,075,650	3,067,483	5.9	17,461	49,000	\$412,004	6.29	91,321
Regulatory	\$2,002										
Subtotal	\$108,791	\$16,791	173,322	1,472,474	5,175,928	8.5	29,707	50,746	\$605,506	4.63	173,322
Gas Programs by Sector	Implementation Spending (\$000)	Customer Contribution (\$000)	Annual Savings (MMBtu)	Lifetime Savings (MMBtu)	\$/lifetime MMBtu				Total Benefits (\$000)	RI Test B/C Ratio	Participants
Non-Income Eligible Residential	\$13,281	\$5,457	189,878	1,525,692	12.28				\$40,807	2.10	189,878
Income Eligible Residential	\$8,658	\$0	34,090	643,906	13.45				\$33,581	3.68	34,090
Commercial and Industrial	\$10,455	\$2,697	213,013	2,535,835	5.19				\$66,161	4.84	213,013
Regulatory	\$745										
Subtotal	\$33,138	\$8,154	436,981	4,705,432	8.78				\$140,548	3.27	436,981
Total for Plan	\$141,929	\$24,945			9,881,361				\$746,054	4.31	610,303

(1) Implementation spending does not include customer contributions, shareholder incentive, or commitments.

(2) Regulatory includes contributions to OER and EERMC.

The energy savings that will result from this Plan will provide a meaningful contribution to the Resilient Rhode Island Act (the Act). Under the Act, the State of Rhode Island set forth the goal to reduce greenhouse gas (GHG) emissions to 80% below 1990 levels by 2050.⁶ The Rhode Island Greenhouse Gas Emissions Reduction Plan (GHG Plan) identifies energy efficiency as an important component for achieving the GHG targets set forth in the Act.⁷ The electric, gas, and oil energy efficiency measures proposed in this Plan will avoid over 1.03 million tons of carbon over the lifetime of the installed measures.⁸ This is the equivalent of removing 199,718 passenger vehicles from the road for one year.⁹

⁶ R.I. Gen. Laws § 42-6.2.

⁷ Rhode Island Greenhouse Gas Emissions Reduction Plan, December 2016.

⁸ Takes into account the net impact of EE measures on carbon emissions. The marginal carbon emission rates are from "Avoided Energy Supply Components in New England: 2018 Report" Appendix K, pages 368-370.

⁹ <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>

In addition to providing customers with cost-savings and contributing to the state's carbon reduction goals, the Plan will also create significant economic benefits in Rhode Island. The Company expects that investments made in energy efficiency under this Plan will add \$ 280.6 million to Rhode Island's state gross domestic product (GDP).¹⁰ The vast majority of jobs associated with the Annual Plan's energy efficiency investments are local because they are tied to the installation of equipment and other materials. An analysis of National Grid's 2018 energy efficiency programs found that 73% of companies involved in the Company's energy efficiency programs were located in Rhode Island.¹¹ Investments in energy efficiency contribute to Rhode Island's economy overall and benefit business owners and their employees who deliver these programs and services.

The savings in the Plan meet the requirements for cost-effectiveness. As defined by the Standards in Docket 4684, the Plan's RI Test benefit-cost ratio - the ratio of Total Benefits to Total Costs - must be greater than 1.0.¹² The overall electric EE Program RI Test ratio is 4.63, and the overall natural gas EE Program RI Test ratio is 3.27. This means that for each \$1 spent on energy efficiency, electric and delivered fuels programs will create \$4.63 of benefits over the lifetime of the investment, and natural gas programs will create \$3.27 in benefits over the lifetime of the investments.

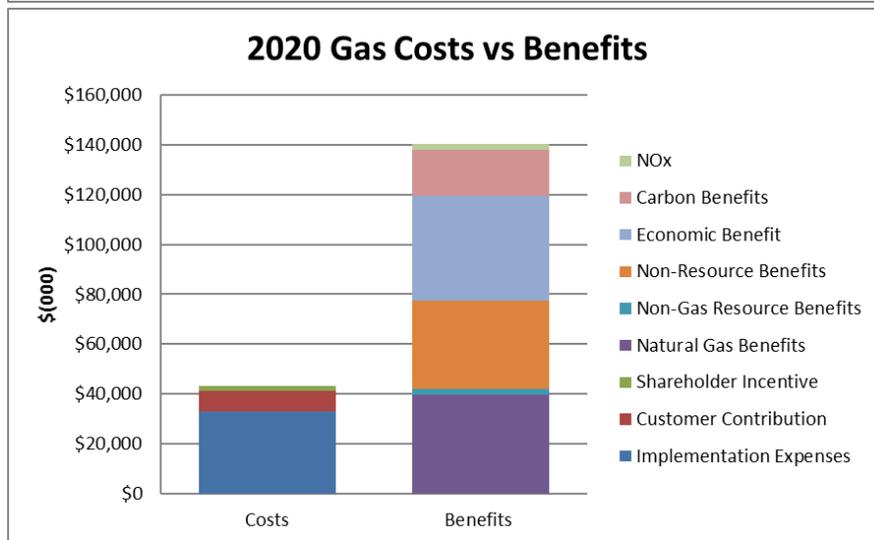
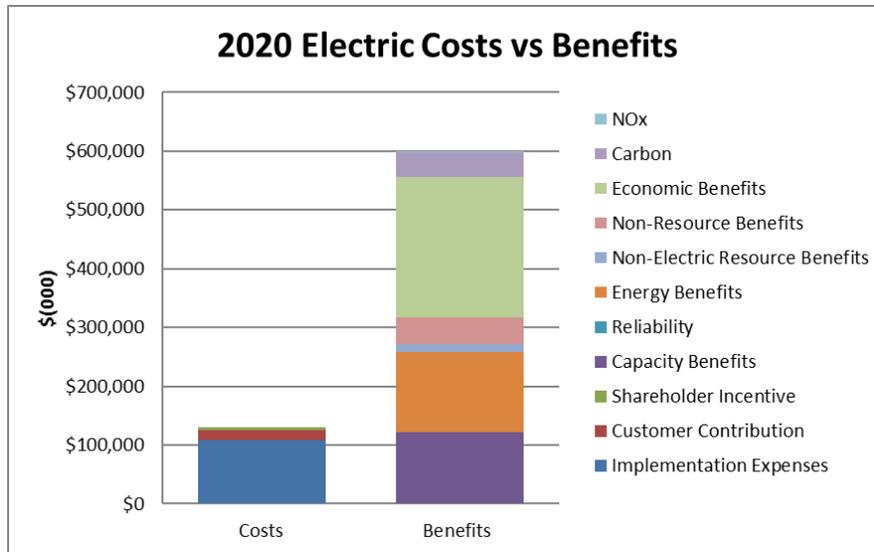
The Standards further require the Company to show a comparison between the RI Test and the Total Resource Cost (TRC) Test. The overall electric EE Program TRC Test ratio is 2.46, and the overall natural gas EE Program TRC Test ratio is 1.80. The TRC Test comparison is included in Table E-5A and G-5A. Graph 1 details the 2020 costs and benefits for the electric and gas portfolios. A detailed summary of the benefits and costs included in the RI Test is included in Attachment 4.

Graph 1. Annual Plan Total Benefits and Total Costs (RI Test)

¹⁰ Macroeconomic multipliers for the economic growth and job creation benefits of investing in cost-effective energy efficiency from "Review of RI Test and Proposed Methodology" prepared for National Grid by the Brattle Group, January 31, 2019.

¹¹ Peregrine Energy Group, "Analysis and Recommendations regarding the Current and Future Workforce associated with Rhode Island Energy Efficiency Programs", May 5, 2019 (filed as part of National Grid's 2018 Year-End Report).

¹² Standards, Section 1.4(C).



In addition to satisfying the primary statutory requirement of cost-effectiveness, the Plan satisfies the additional requirement that the cost of energy efficiency procured be less expensive than the cost of supply as detailed in Section 3. The cost of procuring 1,472,474 MWh lifetime electric energy efficiency savings through the Plan is \$192.9 million less than if that electric load was met by purchasing additional electric supply. The cost of procuring 4,705,432 MMBtu lifetime natural gas energy efficiency savings through the

Plan is \$20.6 million less than if that natural gas load was met by purchasing additional natural gas supply.

Over time, the benefits of procuring energy efficiency at a cost less than supply accrue to customers. From 2009 to projected year-end 2020, electric energy efficiency programs will have saved an estimated xxx million MWh. This number represents the cumulative energy savings for just those energy efficiency measures installed since 2009 (the first year of programs implemented under Least Cost Procurement). Because the average measure life of energy efficiency measures is 10 years, the Company expects that measures installed in 2009 are still providing the same level of energy savings through 2019. This is also true for those measures installed after 2009.¹³ The only exception is the savings from Home Energy Reports. This program only has a one-year measure life, and is counted as such, because it connects with customers annually to prompt them to continue taking energy saving actions. The cumulative xxx million MWh in savings were procured at a cost lower than the cost of supply. Without these energy savings, Rhode Island customers would have had to purchase XX% more energy at a higher cost.

Commented [RJ3]: Will be updated in the second draft

This cost-effective Plan includes an investment of \$114 million for the electric energy efficiency portfolio in 2020. If approved, this will be funded by proceeds from the ISO New England (ISO-NE) Forward Capacity Market (FCM), the existing energy efficiency program charge of \$0.01124 per kWh, plus a fully reconciling mechanism of \$0.00325 per kWh pursuant to R.I. Gen. Laws § 39-1-27.7(c)(5) to fully fund the cost-effective electric energy efficiency programs for 2020.¹⁴

This Plan also includes a \$35 million investment in cost-effective natural gas energy efficiency. If approved, this investment will be funded by the existing energy efficiency program charge of \$0.715 per dekatherm for residential customers and \$0.420 per dekatherm for non-residential customers plus a fully reconciling mechanism of 0.362 per dekatherm for residential customers and plus \$0.422 per dekatherm for non-residential customers pursuant to R.I. Gen. Laws § 39-1-27.7(c)(5) to fully fund the cost-effective natural gas energy efficiency programs for 2020.¹⁵

All Rhode Island electric and gas customers will benefit from lower costs due to investments in energy efficiency whether they participate or not. The Company determines these savings through the Bill Impact analysis that is detailed in Attachment 7. The savings that customers will realize from participating in the energy efficiency programs will offset the energy efficiency program charge. The Bill Impact analyses of the

¹³ Actual lifetime varies by measure but is not included in Graph 3 for ease of illustration. When the Company reports out on savings to ISO-NE it takes into account impact of each measure's life.

¹⁴ See Attachment 5, Table E-1 for list of funding sources and calculation of the charge.

¹⁵ See Attachment 6, Table G-1 for list of funding sources and calculation of the charge.

gas and electric programs show that the average participant will save more than they invest in the energy efficiency program charge. As detailed in Attachment 7, the average participant will see the following annual reductions in their combined electric and gas bills over the lifetime of the installed measures when compared to not having the 2020 energy efficiency program charge: Residential (0.89%, \$22.53); Low Income (2.40%, \$58.24); Small C&I (17.50%, \$1,439.17); Medium C&I; (10.59%, \$2,532.16); Large C&I (3.05%, \$17,091.45). In addition to environmental and economic benefits not reflected on customers' bills, non-participants also benefit from energy efficiency due to reductions in capacity demand and avoided investment in infrastructure that is reflected in rates. When the impacts on both participants and non-participants are averaged, the analysis shows that, on average, the typical Rhode Island customer sees bill savings from energy efficiency. One of National Grid's objectives is to reach as many customers as possible to increase participation and overall bill savings in Rhode Island.

Commented [RJ4]: To be updated for the 3rd Draft.

2. New Savings Goals in 2020 Plan

The Company proposes to create two changes to the savings goals in 2020. For the electric portfolio, the Company proposes to move from Net Annual MWh and Annual kW to a Net lifetime all-fuel savings (MMBtu) goal to fully capture the net effect of all-fuel savings efforts (electric, gas, oil, and propane), as well as the impact of fuel conversions that result in overall lower energy use. This change will allow the Company to better incorporate strategies that support the strategic electrification of the energy sector and better support State and Company goals for the future. For the natural gas portfolio, the Company proposes to move from Net Annual MMBtu to Net Lifetime MMBtu.

The change to lifetime savings for both the electric and natural gas portfolio will better align the Company's incentives to total customer, environmental and system benefits. This change will encourage the Company to develop programs and customer offerings that provide greater overall value than can be achieved by relying on measures with shorter measure lives. As this transition is made, the Company is still committed to reporting savings in annual and lifetime MWh, MW, oil, and carbon for comparison to prior years and the Three-Year plan.

Additionally, these proposed changes to new savings goals are in alignment with the Company's statement in Docket No. 4684 *National Grid 2018-2020 Energy Efficiency and System Reliability Procurement Plan*, that "[G]iven the growing importance of aligning energy efficiency plans with the state's goals for power sector transformation and greenhouse gas emissions reduction, the Company will work with the OER, the DPUC, the EERMC, and the Collaborative to consider new performance metrics to promote these complementary policy goals." Further, these proposed changes support the Docket 4600

Objective of “aligning distribution, utility, customer and policy objectives and interests through the regulatory framework, including rate design, cost recovery, and incentive.”

To convert MWh savings to MMBtus, the Company proposes to use an industry standard conversion factor of 3.412 MMBtu per MWh to calculate site MMBtus.¹⁶ Measures that behave more like generation assets – namely, Combined Heat and Power (CHP) – leverage different conversion factors that consider the generation fuels used to produce the electricity those measures displace. CHPs provide benefits that are unique among energy efficiency measures, including greater electric and thermal efficiency, environmental benefits, and grid benefits.¹⁷ Using a modified conversion factor for CHP savings compares the gas required to operate a CHP unit with the generation mix required to generate the source electricity it displaces. For more traditional efficiency measures, site savings are an appropriate savings metric because they align with the realized energy and bill savings that customers see through their adoption of energy efficiency measures.

The conversion factor to convert CHP savings from “site” to “source” was derived by comparing the CO₂ emissions factor for calculating greenhouse gas (“GHG”) reductions from electric-sector generation (0.494 tons CO₂/MWh) to the emissions factor for natural gas combustion (0.0585 tons/MMBtu).¹⁸ The factor for electric-sector generation represents the CO₂ emissions that are not emitted, on a per MWh basis, because of the reduced generation load due to energy efficiency. Therefore, the ratio between that number and the standard natural gas emissions factor (a ratio equal to 2.355) is the imputed efficiency of the electric grid, and in conjunction with the standard MWh to MMBtu conversion factor is what is used to convert MWh savings from “site” to “source” MMBtu for CHP. This method is in alignment with the method proposed for use by Massachusetts Program Administrators (PAs) to convert to source MMBtu for CHP in its 2019-2021 Three-Year Plan.¹⁹

To determine annual and lifetime MMBtu savings included in the Plan for the electric portfolio, the Company summed the following components.

¹⁶ The conversion factor of 3.412 MMBtu/MWh is a constant value. Energy Information Agency, EIA: https://www.eia.gov/totalenergy/data/monthly/pdf/sec13_7.pdf

¹⁷ U.S. EPA, CHP Benefits <https://www.epa.gov/chp/chp-benefits>

¹⁸ Emissions factors used in this calculation are derived from the Avoided Energy Supply Components in New England 2018 report. <http://www.ripuc.org/eventsactions/docket/9.%20AESC-2018-17-080-Oct-ReRelease.pdf>

¹⁹ See Massachusetts DPU 18-118, Exhibit DPU-Comm 4-1, Pages 1-2. <https://fileservice.eea.comacloud.net/FileService.Api/file/FileRoom/10054828> and Massachusetts DPU 18-110 through 18-118, 2019-2021 Three-Year Energy Efficiency Plans Order, Pages 156 – 159. https://www.mass.gov/files/documents/2019/01/31/2019-2021%20Three-Year%20Energy%20Efficiency%20Plans%20Order_1.29.19.pdf. The Massachusetts PAs plan to study the method employed for converting CHP savings from site-to-source during the 2019 – 2021 plan period per the Massachusetts DPU’s order.

- Electric energy savings (except for CHP measures and any energy usage associated with active demand reduction): all kWh realized at a customer's site, including the negative impacts of any increased kWh due to fuel switching, are converted into MMBtus using the standard conversion of 3.412 MMBtu per MWh.
- Electric energy savings from CHP: all kWh energy savings are converted to source MMBtu as described above.
- Gas: all gas energy savings/gas usage increases are converted from therms to MMBtu.
- Oil: all oil energy savings/oil usage increased included as MMBtu.
- Propane: all propane energy savings/propane usage increased included as MMBtu.

Section 14, below, describes how the savings goal will be tied to the shareholder incentive.

3. Cost of Annual Plan Compared to the Cost of Energy Supply

In accordance with the Standards the Company assessed the cost of energy supply and the cost of energy efficiency using all applicable costs enumerated in the Rhode Island Benefit Cost Framework (Framework) approved by the PUC in Docket No. 4600A and the Rhode Island Test as described in Attachment 4 of the Plan. This method is the same as that used in the 2019 Plan.

The RI Test is an appropriate starting point to determine which costs to include in this assessment. The RI Test, as detailed in Attachment 4, captures the aspects of the Framework that pertain to energy efficiency programs. The source for many of these values is the "Avoided Energy Supply Components in New England: 2018 Report" (2018 AESC Study) prepared by Synapse Energy Economics for the AESC 2018 Study Group, June 1, 2018. The benefits in the RI Test are associated with the cost savings to Rhode Island from investing in energy efficiency instead of investing in additional energy supply. For the purpose of the RI Test, these values are described as a benefit of energy efficiency in the form of avoided costs. The avoided cost values can also be applied as the costs of procuring additional energy supply for the purpose of this assessment. The RI Test also details what is considered a cost of energy efficiency. These are costs incurred by the utility to implement the Plan and the expense borne by the customer for its share of the energy efficiency measure cost.

The Company proposes to use the costs described in Table 2 to compare the cost of energy efficiency to the cost of energy supply. The categories listed in this table are all used in the RI Test, as proposed in Attachment 4 of the Plan. As directed by the Standards, the Company provides an explanation for why cost categories are either appropriate or

not appropriate for inclusion in the assessment of the cost of energy supply compared to the cost of energy efficiency.

Table 2. List of the Costs of Energy Efficiency and Costs of Energy Supply

Cost of Energy Efficiency		
Cost	Included	Explanation
Utility Costs	Yes	These costs are incurred to achieve implementation of energy efficiency measures and programs. Includes all costs in Tables E-2 and G-2.
Participant Costs	Yes	Customer contribution to the installation cost of the efficient measure. Customer costs included in Tables E-5 and G-5.
Cost of Energy Supply		
Cost	Included	Explanation
Electric Energy Costs	Yes	Represents the cost of purchasing electric energy supply.
Electric Generation Costs	Yes	Represents cost of generation capacity in ISO-NE.
Electric Transmission Capacity Costs	Yes	Represents Pool Transmission Facilities (PTF) cost.
Electric Distribution Capacity Costs	Yes	Represents the cost of distribution capacity related to increased load.
Natural Gas Costs	Yes	Represents the cost of purchasing natural gas supply.
Fuel Costs	Yes	Non-regulated delivered fuels are an energy supply cost to customers that utilize these fuels for heating. The fuel costs in this category are separate from those embedded in the cost of the electric market. While not a direct cost of electric energy supply, National Grid includes incentives for delivered fuel energy efficiency measures in its

		electric portfolio. Therefore, to achieve symmetry with costs associated with electric energy efficiency, delivered fuels costs should be included in this comparison.
Water and Sewer Costs	No	While avoided water and sewer costs are a benefit of installing certain energy efficiency measures, they are not a direct cost of energy supply.
Non-Energy Impact Costs	No*	*Unless listed below. While non-energy impacts are a benefit of installing certain energy efficiency measures, they are not a direct cost of energy supply.
a) Income Eligible Rate Discount	Yes	Costs associated with energy being sold at the low income rate.
b) Arrearages	Yes	Costs associated with arrearage carrying costs as a result of customers not being able to pay their energy bills.
Price Effects	Yes	Represents costs associated with the impact of demand reduction on ISO-NE energy and capacity markets.
Non-embedded Greenhouse Gas Reduction Costs	Yes	Represents the social cost of carbon. The social cost of carbon is the cost associated with meeting the Resilient Rhode Island Act. Carbon emissions come from the production of energy and should be considered a cost of supplying that energy.
Economic Development	No	While economic development is a benefit of investment in energy efficiency measures it is not a direct cost of energy supply.
Non-embedded NOx Costs	Yes	NOx emissions come from the production of energy and therefore the health impacts of NOx emissions should

		be considered part of the cost of supplying that energy.
Reliability Costs	Yes	Increased energy demand can lead to declining reserve margins and decrease reliability so should be associated with the cost of energy.

For the assessment, the Company applies the above costs of supply to the lifetime energy, demand, and natural gas savings for each measure included in the Plan in present value terms. The costs of energy efficiency occur in the first year of the Plan and are therefore not discounted.

Applying this methodology, based on the Company’s calculation, the total cost of energy efficiency for the electric portfolio is \$130.7 million and the total cost of electric supply is \$323.6 million. This is a total savings of \$192.9 over the life of the installed energy efficiency measures from investing in energy efficiency instead of electric supply. The total cost of energy efficiency for the natural gas portfolio is \$43.0 million and the total cost of natural gas supply is \$63.6 million. This is a total savings of \$20.6 million over the life of the installed energy efficiency measures from investing in energy efficiency instead of natural gas supply.

4. Annual Plan Compared to Three-Year Plan for Year 2020

The energy and cost savings for the 2020 program year are consistent with the objectives and requirements of Least Cost Procurement. In 2020 the Company is proposing to move to net lifetime MMBtu goals as described in section 2 above. However, the Company will continue to track and report on the annual targets set in the Three-Year plan for 2020.

Cumulatively, the Three-Year Plan illustrated a path of achieving 564,154 Annual MWh, and 1,186,718 Annual MMBtu of savings over the three years. This Annual Plan delivers on that vision based on past and projected performance. With strong performance in 2018 and projected 2019 savings, this 2020 plans on savings that are 9,954 above the Three-Year Annual MWh target and 180,090 above the Annual Natural Gas MMBtu target. Proposing an Annual Plan that will deliver electric and natural savings above the cumulative Three-Year Plan goal demonstrates National Grid’s continued commitment to planning the most aggressive and nation-leading savings that are achievable in practice, a principle described in the Three-Year Plan.

Electric				
	2018	2019	2020	Cumulative 2018-2020 Annual Savings
Annual Goal, Three-Year Plan (MWh)	179,968	194,677	189,509	564,154
Annual Achieved/Planned (MWh)	206,209	194,677	173,222	574,108
Absolute Difference	26,241	0	-16,287	9,954
Percent of Annual Goal Achieved/Planned	115%	100%	91%	102%

2019 achieved/planned will be updated in the second draft with forecasts from the second quarter report.

Gas				
	2018	2019	2020	Cumulative 2018-2020 Annual Savings
Annual Goal, Three-Year Plan (MMBtu)	384,486	396,859	405,373	1,186,718
Annual Achieved/Planned (MMBtu)	497,119	432,708	436,981	1,366,808
Absolute Difference	112,633	35,849	31,608	180,090
Percent of Annual Goal Achieved/Planned	129%	109%	108%	115%

2019 achieved/planned will be updated in the second draft with forecasts from the second quarter report.

The annual electric savings proposed for 2020 is 173,322 MWh, or 2.31% of the referenced 2015 load. The Company has proposed aggressive goals consistent with Least Cost Procurement, however the 2020 annual savings fall short of the Three-Year illustration for three reasons. First, evaluations have found decreased attribution of savings, namely due to the successful transformation of the lighting market and more is described in Section 4.A, below. Second, the Company is focused on longer-life, all fuel savings for customers, not just electric, as evidenced by increased promotion and participation in delivered fuel savings and the proposed transition to a Lifetime MMBtu goal. For example, 15% of the proposed electric and delivered fuels' net lifetime MMBtu goal comes from delivered fuel measures, energy savings that is not reflected in a MWh goal. Lastly, the Three-Year Plan illustration assumed that 16% of the 2020 Annual savings and 29% of the lifetime savings would come from Combined Heat and Power (CHP). The Company worked with several customers on large projects that do not currently appear to be possible given current project statuses and required minimum lead times and no large-scale CHP project is planned for completion in 2020. The Three-Year Plan highlighted the challenges in predicting large CHP projects and noted that annual target illustrations depended on these projects. Though the 2020 Annual electric savings are lower than the Three-Year Plan, the Company has proposed maximum achievable savings in 2020 in end-uses other than CHP to best meet annual ambitions of the Three-Year Plan.

The annual natural gas savings for 2020 is 436,981 MMBtu, or 1.07% of 2015 natural gas load. The annual gas savings are 8% higher than illustrated in the Three Year Plan and this demonstrates the Company's commitment to proposing maximum achievable savings.

The Annual savings are higher than the Three-Year Plan due primarily to evaluation results increasing attribution of savings, described more fully in section 4.A below, and higher customer savings from Home Energy Reports.

The following table compares the Annual Plan components to the Three-Year Plan.

Table 3: Annual Plan compared to Three-Year Plan for Year 2020

Electric Programs	2020 3 Year Plan	2020 Annual Plan	% Change
Annual Savings (MWh)	189,509	173,322	-9%
Lifetime Savings (MWh)	2,160,318	1,472,474	-32%
Annual Savings (MMBtu)		523,035	N/A
Lifetime Savings (MMBtu)		5,175,928	N/A
Annual Summer Demand Savings (kW)	34,224	29,707	-13%
Total Benefits	\$ 451,782,884	\$ 576,038,250	28%
Total Spending	\$ 109,090,025	\$ 114,489,274	5%
Benefit Cost Ratio (RI Test)	3.23	4.63	43%
Cost/Lifetime kWh	\$ 0.062	\$ 0.085	37%
EE Program Charge per kWh	\$ 0.01193	\$ 0.01449	21%

Gas Programs	2020 3 Year Plan	2020 Annual Plan	% Change
Annual Savings (MMBtu)	405,373	436,981	8%
Lifetime Savings (MMBtu)	4,682,906	4,705,432	0%
Cost/Lifetime MMBtu	\$ 8.68	\$ 8.78	1%
Total Benefits	\$ 104,184,334	\$ 140,548,009	35%
Total Spending	\$ 31,846,313	\$ 34,849,785	9%
Benefit Cost Ratio (RI Test)	2.47	3.27	32%
C&I EE Program Charge per Dth	\$ 0.758	\$ 0.842	11%
Residential EE Program Charge per Dth	\$ 0.928	\$ 1.077	16%

As noted in previous PUC dockets, Annual Plans may contain budgets and energy efficiency program charges that vary from those contained in the Three-Year Plan.²⁰ The Three-Year Plan creates savings targets and illustrative budgets to guide the Company in the development and long-term strategy of its Annual Plans over the upcoming three-year period. After the Company files the Three-Year Plan, there are numerous factors that may lead to changes in funding needs and savings availability. These factors include:

²⁰ PUC Order No. 21781 approving National Grid's September 2, 2014 Energy Efficiency and System Reliability Procurement Plan for three-year period 2015-2017. Written Order issued 12/19/14.

updates to the avoided cost study, electric and gas sales, available fund balance, ISO-NE's FCM auction proceeds, evaluation results, market conditions, customer preferences, and changes in legislation.

For the Annual Plan, the electric and natural gas energy efficiency portfolio savings, benefits, budgets, and energy efficiency program charges differ compared to the illustration presented in the Three-Year Plan. There are several factors contributing to this difference.

A. Evaluation Results

Evaluation results impact the portion of gross savings that the Company can claim as attributable to its energy efficiency programs.

The evaluation of several programs (i.e. C&I Upstream HVAC and C&I Upstream Lighting impact and net-to-gross studies, Residential Lighting and Products net-to-gross studies, and Income Eligible Services Single Family Program Impact Evaluation) showed that programs generated lower electric savings for participants than initially anticipated. The application of these evaluation findings results in lowered annual and lifetime electric savings that can be attributed to the

Electric Program	Change from 3YP to 2020 Plan	
	Annual MWh	%
C&I Total	(8,960)	-7%
C02a Design 2000plus	1,505	8%
C03a Energy Initiative	(10,618)	-11%
C03b Small Customers under 200kW	152	2%
	-	
Income Eligible Total	(1,542)	-20%
B03a Single Family - Appliance Management	(1,542)	-37%
B03b Low Income Retrofit Multifamily	-	0%
	-	
Residential Total	(7,769)	-14%
A02a Energy Star Homes	88	12%
A02b Energy Star HVAC	151	5%
A03b Energywise	(1,588)	-29%
a03b Energywise MF	-	0%
A03c Behavior/Feedback Program	(3,787)	-15%
A04a Energy Star Lighting	(2,373)	-15%
A04b Energy Star Products	(259)	-11%
Grand Total	(18,271)	-10%

energy efficiency programs in the proposed 2020 Annual Plan compared to 2020 in the Three-Year Plan. As a result of these evaluation studies, the Company

estimates it will claim 18,721 annual MWh less in the 2020 annual plan than was planned for 2020 in the three-year plan.

For gas, C&I Custom impact studies and the C&I Free Ridership and Spillover Study showed that programs generated higher gas savings for participants than originally estimated. In addition, higher savings per participant in the gas Home Energy Report program has also led to higher claimable savings. The application of these evaluation findings and the higher savings per participant for the gas Home Energy Report program resulted in the Company setting higher annual and lifetime gas savings goals in the Annual Plan than in the Three-Year Plan.

B. Updated Sales and Fund Balance Projections

The energy efficiency program charge for electric and gas customers varies from

Gas Program	Change from 3YP to 2020 Plan	
	MMBtu	%
C&I Total	3,559	2%
Commercial New Construction	446	1%
Commercial Retrofit	3,064	2%
Direct Install	49	2%
C&I Multifamily	-	0%
	-	
Income Eligible Total	(5,289)	-18%
Low Income Single Family	(5,289)	-40%
Low Income Multifamily	-	0%
	-	
Residential Total	35,714	23%
A02b Energy Star Heating System	488	2%
A03b EnergyWise Multifamily	-	0%
Behavior	35,381	46%
Residential New Construction	(154)	-4%
Energy Wise Single Family	-	0%
Grand Total	33,984	8%

the Three-Year Plan to the Annual Plan for several reasons, including updates to the sales projections, fund balance projections, and program budgets, which are all factors in the calculation of the charge. These values could change further when the Company files an updated fund balance on December 2, 2019 as proposed in Section 6(a).

The natural gas energy efficiency program charge increased from \$0.928 per Dth in the Three-Year Plan to \$1.077 per Dth in the Annual Plan for residential customers and from \$0.758 per Dth to \$0.842 per Dth for C&I customers. The

increase in these charges is primarily driven by a negative projected 2019 year-end fund balance of \$3.3 million.

The combination of a decrease in the electric sales forecast since the Three-Year Plan was filed, a higher electric budget, lower revenue from the ISO-NE Forward Capacity Market, and a negative projected year-end 2019 fund balance of \$6.1 million have increased the electric energy efficiency program charge from \$0.01193 per kWh in the Three-Year Plan to \$0.01449 per kWh in the Annual Plan.

C. Lifetime Savings and Benefits

Electric lifetime MWh savings are lower than in the Three-Year Plan due to the reduction of the portion of gross savings attributed to the programs as detailed in section A above. In addition, more of the annual electric MWh savings are coming from the residential sector, specifically EnergyStar lighting, than was anticipated at the time of the Three-Year Plan filing. Residential measures on average have fewer lifetime MWh savings than C&I measures and lighting lifetimes savings across all residential programs are impacted due to the federal Energy Independence and Security Act (EISA) lighting standards. As stated in section 4, the Three-Year Plan illustrated annual and lifetime MWh, kW and benefits if a large CHP was installed in 2020 and that some large CHP opportunities have been deferred and will not move forward within the three year time frame.

Gas lifetime savings are lower due to changes in measure mix. This is principally driven by an increase in savings coming from residential measures compared to C&I measures. Residential measures on average have fewer lifetime savings than C&I measures.

Total benefits increased in the electric and gas sectors due to the application of updated avoided cost values from the "Avoided Energy Supply Components in New England: 2018 Report" (2018 AESC Study). The 2018 AESC Study found higher avoided costs for fuel oil and values for electric capacity demand reduction induced price effect (DRIPE) and oil DRIPE, which were estimated to be non-existent or were not calculated in AESC 2015 Study shown in Table 5 below shown in 2018 dollars.

Table 5. 2018 AESC Study DRIPE Values Relative to 2015 AESC Study²¹

²¹ Values from 2018 Avoided Cost Study ES-Table 1.

	AESC 2015 cents/kWh	AESC 2018 cents/kWh	% Difference
Capacity DRIPE	0.00	0.91	-
Energy DRIPE	1.24	1.91	54%
Subtotal: DRIPE	1.24	2.81	128%

The study also quantified new benefits for non-embedded NOx reduction benefits, value of improved reliability, and avoided pool transmission facilities (PTF) costs. The macroeconomic multipliers for the economic benefits of investing in cost-effective energy efficiency were also updated from a recent study "Review of RI Test and Proposed Methodology" prepared for National Grid by the Brattle Group, January 31, 2019. Due to all these factors the benefits have increased in 2020 when compared to 2020 in the Three-Year Plan.

5. Strategies to Achieve Goals

The primary goal of the Annual Plan is to create²² cost-effective energy savings for Rhode Island electric and gas customers through energy efficiency. This Plan has sought to balance pursuing energy and financial savings from current technologies and programs while also seeking to identify new technologies, finance channels, and programs to continue delivering savings to Rhode Island customers for years to come. The Plan achieves the goals laid out above by implementing the following key priorities, introduced in Docket 4684:

- 1. Customers** - Deliver comprehensive services that encompass all market segments and customers. Such services will enable customers to control their energy use, manage their peak energy use, reduce their bills, and help support their financial well-being.
- 2. Least Cost** - Deliver energy efficiency services as cost-effectively as possible through optimizing finance and promoting upstream initiatives. Continuing to deliver cost-effective energy savings under Least-Cost Procurement will create cost savings to all customers, while creating economic benefits that create and maintain local jobs and businesses.

²² Please see Sec. 1 Introduction and Summary for an overview of the stakeholder process that was undertaken to create this 2020 Annual Plan.

3. **Environment** - Provide solutions that minimize greenhouse gas emissions and contribute to Rhode Island's clean energy policy goals, including the Resilient Rhode Island Act.
4. **Future** - Innovate to capture savings from new technologies and strategies to position energy efficiency programs for the future including the integration of energy efficiency with demand response, renewable energy, and smart grid technologies. This includes incorporating outcomes from the Rhode Island Power Sector Transformation Initiative and Docket 4600.

6. Delivering 2020 Goals

National Grid will build on its almost thirty years of experience to deliver the energy and cost savings goals in this Plan.²³ Below are some key considerations that impacted how programs were planned to be delivered in 2020 as well as an explanation of the Residential and Commercial and Industrial programs, and what has changed for the 2020 program year.

i. Customer Strategy and Segmentation Insights

Today's customers are enjoying new and higher levels of service and convenience thanks to the application of advanced technology, digitalization, and big data across industries. While safety, reliability and affordability remain the foundation of the Company's services for its customers, the Company is expanding its efforts to respond to a growing range of personalized customer needs for visibility, control, choice, and convenience in their energy experience. Based on recent surveys and industry intelligence, National Grid customers:

- Expect their energy experience to be affordable;
- Show a willingness to alter energy use to achieve savings;
- Want to easily access their energy usage data from a variety of channels;
- Use connected devices for greater control of the power coming into their homes;
- Request tailored, personalized choices for energy consumption options; and
- Need convenient energy services and solutions.

²³ Throughout the program year, the Parties may consider additional enhancements beyond those identified in this Plan as more information becomes available to support an informed review of those potential changes. As part of this process of identifying additional enhancements, in addition to continuing to meet with the Collaborative, the Company will continue its work sessions with the EERMC's consultants.

National Grid also recognizes that maximizing customer engagement requires a deeper understanding of who the Company's customers are, what they need, and what they want. To better understand how those needs and desires differ across customers, the Company recently completed a deep needs-based customer segmentation analysis of residential and commercial customers across its territory, based on surveys around needs, attitudes, product awareness and interest. Through this process, the Company identified six residential and five commercial segments, each of which contains in-depth profiles of energy-related attitudes, products and services customers are interested in, engagement preferences and favored means of interaction. As a result of this work, the Company is well positioned to engage customers on relevant energy efficiency program offerings.

ii. **Electrification of Heat:**

The Company is proposing to increase the number of homes to be incentivized to displace their existing oil, propane, or electric resistance heat with high efficiency electric heat provided by air source heat pumps. Electrification of heating supports the goals of RI state policy, the Revised Standards and National Grid's Northeast 80 x 50 Pathway.

Increasing the number of homes will be reflected in the market rate, multifamily, and income eligible markets to help customers save energy and money on their bills and to also provide a meaningful contribution to the state's climate goals. Through the existing electric HVAC program, the Company has strong vendor networks, training capabilities, and access to data that will help identify homes where air source heat pumps would be an ideal solution for displacing oil, propane or electric resistance.

Coordination and collaboration among the Company, RI OER, Oil Heat Institute, Northeast Energy Efficiency Partnerships (NEEP) and other stakeholders will strive to effectively accelerate electrification strategies across RI.

The program will continue to concentrate on the following program elements:

- Establishing a plan for accelerating electric heat adoption to meet State and utility greenhouse gas goals.
- Training contractors on accurate sizing, installation and customer education
- Educating customer pre-purchase and post-installation.
- Coordinating with National Grid Regulatory Strategy and the RI System Reliability Plan on locational benefits and incentives.
- Supporting the advancement of effective integrated controls.
- Supporting the development of customer-facing tools for choosing heating type.

- Collaborating with stakeholders to accelerate the decarbonization of the residential heating sector by reducing barriers (The Company, RI OER, RI Oil Heat Institute, NEEP and manufacturers).
- Incorporating high efficiency electric heat as a metric in the Community challenge.

iii. **Natural Gas Program Offerings:**

For more than a decade National Grid has helped save gas through energy efficiency that has helped customers reduce costs, decrease their carbon footprint, reduce environmental impacts and support system reliability independent of customer fuel choice. While Rhode Island considers the transformation of heating, there are near term customer and environmental benefits to be gained from the continued customer energy efficiency. Consistent with the Comprehensive Energy Conservation, Efficiency, and Affordability Act of 2006, R.I. Gen. Laws § 39-2-1.2, and the Least Cost Procurement Standards, National Grid will continue to offer cost effective natural gas energy efficiency in 2020 and has set ambitious targets, above the Three Year Plan, in order to achieve these savings and benefits.

Additionally, in 2020, the Company will expand the Commercial and Industrial Gas Demand Response pilot that was launched in 2018-2019 winter to address grid constraints and help provide reliable service to our customers. With this pilot Company will learn about the reduction of gas system peak demand via a reduction in overall natural gas consumption, customer adoption of gas DR as well as incentive levels to drive participation. An in-depth study will also be completed to quantify winter demand benefits. Testing gas DR will allow the Company to understand the impact on gas and electric systems, as well as understanding if National Grid's role in the market influences rates of adoption. More information is available in Attachment 8.

iv. **Future of Lighting:**

As a result of the successful transformation of the residential lighting market, savings per bulb have been reduced to reflect natural adoption in the marketplace. Shelf stocking studies show a reduction in square footage allocated to lighting products due to the expanded lifetime of the product. Retail partners describe how they have changed their floor plans and how that useful square footage is now accommodating other products. At the same time, RI program efforts have resulted in larger ENERGY STAR LED sales as well as lower non-ENERGY STAR LED sales as compared to states that do not offer residential lighting programs. While the success of the program has resulted in a nearly transformed market, there remains residential lighting opportunities in 2020 that will be supported during these transition years to a fully transformed market. There has been an increasing

focus on supporting hard-to-reach areas including the RI Food Banks which will continue during 2020. A refreshed online marketplace was introduced in 2019 which may appeal to younger renters and homeowners. The Company is also increasing both the *EnergyWise* and Income Eligible Programs to move funding spent on residential lighting into longer-term energy savings areas.

v. **Residential Programs**

In 2020, the Parties agree to continue the residential programs offered in 2019. The Parties also agree to offer new programs and demonstrate the development of new technologies for potential inclusion in programs in future years. The programs are summarized below and described in further detail in Attachment 1, along with descriptions of what is new in 2020. The description of each program includes proposed changes from 2019 that are intended to help meet the savings targets for 2020.

Table 6. Residential Energy Efficiency Programs		
Program Name	Program Description	Changes for 2020
EnergyWise Program (Funded by Electric and Gas)	EnergyWise offers single-family customers home energy assessments and information regarding their actual energy usage. Participants in this program receive recommendations and technical assistance as well as financial incentives to replace inefficient lighting fixtures, appliances, thermostats, and insulation levels with models that are more energy efficient. The program addresses base load electric use and heating and cooling energy loads in all residential buildings. The program recommends efficient products that are delivered through National Grid's various programs as well as solar opportunities provided through statewide solar initiatives. The program will continue to deliver finance opportunities to customers such as the Heat Loan and the Rhode Island Infrastructure Bank's residential financing opportunities, when available.	<ul style="list-style-type: none"> EnergyWise is planning with the largest number of home energy assessments and weatherization goals for this program. In planning to overcome the reduction of savings from the ENERGY STAR® Lighting program, EnergyWise is one strategic offering that will look for longer term energy savings opportunities.

<p>Multifamily Programs Income Eligible, Residential and Commercial sectors (Funded by Electric and Gas)</p>	<p>Comprehensive energy services for multifamily customers include energy assessments, incentives for heating and domestic hot water systems, cooling equipment, lighting, and appliances. Coordinated services will be offered for all types of multifamily properties. An approach tailored for multifamily properties designates a primary point-of-contact to manage and coordinate services offered through the Company's existing portfolio, including EnergyWise, C&I Retrofit, Residential New Construction, Income Eligible, and the ENERGY STAR® HVAC programs.</p>	<ul style="list-style-type: none"> • In 2020 the Company will review and assess multifamily marketing efforts to identify how the program can make improvements in its marketing efforts. • Included in this will be outreach to Community Development Corporations (CDCs) to see how the Company and its vendor can best work with these organizations to identify additional project sites.
<p>Income Eligible Single Family (Funded by Electric and Gas)</p>	<p>Income Eligible Single (IES) Family Services are delivered by local Community Action Program (CAP) agencies with oversight provided by a Lead Industry Partner. Three levels of home energy assessments are offered: (1) lighting and appliance, (2) heating and weatherization, and (3) comprehensive. Customers who qualify for LIHEAP are eligible to receive all services and equipment upgrades at no cost.</p>	<ul style="list-style-type: none"> • Work with the National Grid Customer Service Center efforts to encourage income-eligible customers to register for the income-eligible rates and sign up for no-cost IES energy efficiency services. • Collaborate with the CAPS and DHS to increase the number of qualified AMP/weatherization and heating auditors to meet the needs for anticipated growth in EE services. • Incorporate improvements based on the learnings from the 2018 process evaluation. • Engage with local and national stakeholders and thought-leaders to discuss the interplay of benefits between energy efficiency, healthcare and renewable energy industries.

Residential New Construction (Funded by Electric and Gas)	The Residential New Construction (RNC) program promotes the construction of high-performing energy efficient single family, multifamily, and low income homes, as well as the education of builders, tradesmen, designers, and code officials.	<ul style="list-style-type: none"> • High Efficiency all-electric incentive path coupled with stringent air tightness standards and high efficiency heating, cooling and hot water equipment. • In 2020 new air tightness requirements will be added to the existing tiered incentive structure for Tier 2 and above.
Residential Home Energy Report Program (Funded by Electric and Gas)	The Home Energy Reports (HER) program is the Company's key program to achieve energy savings through changes in customer behavior by presenting personalized energy usage data and encouraging desired behaviors to reduce energy consumption. The Company will continue to deliver Home Energy Reports that offer enhanced feedback tools to inspire customers to take actions that reduce their energy consumption and also increase their participation in other energy efficiency programs.	<ul style="list-style-type: none"> • The Company will launch a Target Rank campaign over six months showing customers their energy use rank compared to similar neighbors. Target Rank reports are designed to encourage consistently high users to lower their energy use by providing an alternative experience and an achievable goal • Context-aware tips and personalized tip savings estimates will be provided in 2020.
ENERGY STAR® Lighting (Funded by Electric Only)	This initiative is implemented jointly with other regional utilities. It provides discounts to customers for the purchase of ENERGY STAR® lighting through instant rebates, special promotions at retail stores, pop-up retailer, and social marketing campaigns.	<ul style="list-style-type: none"> • The Company will focus on tracking policy changes to residential lighting standards and the market to adapt the ENERGY STAR lighting program appropriately. The goal is to support the market as needed without a negative impact to market transformation as incentives decline and ultimately are no longer required. As in prior years, the food banks and hard-to-reach opportunities will continue to be supported.

<p>Residential Consumer Products (Funded by Electric Only)</p>	<p>This program is run in collaboration with other regional utilities to promote the purchase of high efficiency household appliances, including kitchen appliances and electronics. These appliances carry an ENERGY STAR® label. The program also offers refrigerator recycling, which promotes more efficient refrigerators while removing non-efficient units from the market.</p>	<ul style="list-style-type: none"> • In 2020, National Grid is planning to test instant consumer rebates. Consumers will be able to prequalify for a retailer's in store coupon and have the incentive applied during the sale transaction of select consumer products. • The benefit is that post purchase consumer incentives will not be required along with the wait time that results with post purchase processing. The Company will also be continuing the low-e storm windows effort that began in late-2019. • The Online Marketplace, which was refreshed in 2019, will include modules that assist the consumer in selecting more efficient consumer products.
<p>ENERGY STAR® HVAC Program (Funded by Electric and Gas)</p>	<p>This program promotes the installation of high efficiency central air conditioners for electric customers and new energy efficient natural gas related equipment including boilers, furnaces, water heating equipment, thermostats, boiler reset controls, and furnaces equipped with high efficiency fans. The program provides training of contractors to increase accurate installation practices, testing of the high efficiency systems, tiered rebates for new ENERGY STAR® systems, and incentives for checking new and existing systems. The program also includes oil and propane heating equipment rebates.</p>	<ul style="list-style-type: none"> • The new Online Marketplace will promote the following energy efficient HVAC equipment: Thermostat, Water Savings Equipment, Water Heater.
<p>Community Based Initiatives</p>	<p>The initiative is designed to leverage trusted community partnerships and develop targeted marketing strategies in</p>	<ul style="list-style-type: none"> • Increased focus will be placed on the promotion of new technologies within the

(C&I and Residential, Funded by Electric and Gas)	order to promote all energy efficiency programs, residential and commercial, in specific targeted communities or businesses.	communities such as cold climate mini-split heat pumps, Wi-Fi Thermostats, and demand response offerings and locational incentives will be considered. <ul style="list-style-type: none"> • More emphasis will be placed on the small business component of the program with “Main Street” direct install initiatives occurring in 2020.
Residential Connected Solutions (Demand Response) (Funded by Electric)	Residential Connected Solutions focuses on reducing peak load through the use of wi-fi thermostats and other eligible technologies which may include batteries, lighting, water heaters, pool pumps, electric vehicles, and other devices.	<ul style="list-style-type: none"> • The electric vehicle program will be new for 2020 if the data reporting element can be accomplished. This offering was scoped in 2019 but was not feasible due to limited manufacturer data reporting. • The program also grows by looking to add additional product manufacturers into the program.
Residential Pilots (Funded by Electric and Gas)	In 2020, the Company will continue the Zero Energy Home pilot to help accelerate the zero energy home market in Rhode Island. In 2020 the pilot will focus on four main areas: Education and Awareness, Workforce Development, Project Incentives, and Marketing.	<ul style="list-style-type: none"> • The Company will continue the Zero Energy Home pilot to help accelerate the zero energy home market in Rhode Island. In 2020 the pilot will focus on four main areas: Education and Awareness, Workforce Development, Project Incentives, and Marketing.
Education Programs (Funded by Electric Only)	The Company promotes energy education to private and public schools and youth groups through the National Energy Education Development (N.E.E.D) Program. This program provides curriculum materials and training to students and teachers in grades K-12.	

vi. **Residential Income Eligible Programs**

The Company and the Parties want customers who have a high energy burden and/or difficulty paying their electric bills to participate in, and benefit from, the Company’s energy efficiency programs. Therefore, this segment of the customer base is designated as a unique sector, and funding for this sector will be subsidized by both non-low-income residential customers and commercial and industrial customers using 15% of total implementation funding for the electric programs, and 26% for natural gas programs.

In addition to the Income Eligible Single Family and Multifamily programs, the Residential New Construction Program also works with housing authorities and developers to build energy-efficient multifamily properties. Additional details about the services offered to economically disadvantaged customers are described in the residential programs in Attachment 1.

vii. **Commercial and Industrial Programs**

In 2020, the Parties agree to continue the commercial and industrial programs offered in 2019 and assess new technologies for potential inclusion in programs in future years. These programs are summarized in Table 4 below.

Table 7. Commercial and Industrial Energy Efficiency Programs		
Program Name	Program Description	Changes for 2020
<p>Large Commercial New Construction and Building Energy Code and Appliance Standards (Funded by Electric and Gas)</p>	<p>This program promotes energy efficient design and construction practices in new and renovated commercial, industrial, and institutional buildings. The program promotes and incentivizes the installation of high efficiency equipment in existing facilities during building remodeling and at the time of equipment failure and replacement. Large Commercial New Construction aims to prevent or mitigate lost opportunities because a customer who does not install energy efficient equipment at the time of new construction or equipment replacement will likely never make the investment for that equipment or will make the investment at a much greater cost at a later time. The program also promotes energy efficient building design</p>	<ul style="list-style-type: none"> • Rhode Island is currently using the code IECC 2012; the State of Rhode Island will adopt the IECC 2015 code in November of 2019. The Company has set the level of performance above code for incentives at XXXX, • Conditional to stakeholder agreement on near- and long-term pathways for claiming savings for advancing the state’s adoption of more

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	<p>for new construction projects and for major renovations. The program provides both technical and design assistance to help customers identify efficiency opportunities in their new building designs and to help them refine their designs to pursue these opportunities. Incentives are also offered to owner’s design teams for their time and effort to meet program requirements. Operations Verification or quality assurance is also offered to ensure that the equipment and systems operate as intended.</p> <p>The program also promotes compliance with the building energy code and increased use of the Stretch Code to support the State’s goals and objectives. In addition, it provides technical assistance in advancing the development and adoption of minimum efficiency standards for appliances and equipment. Finally, the program supports the States Zero Energy Building (ZEB) goals through engagement and development of ZEB programs in the future.</p>	<p>efficient energy codes, the Company will provide technical guidance during the state’s next building code update process (IECC 2018) in 2020.</p>
<p>Large Commercial Retrofit (Funded by Electric and Gas)</p>	<p>Large Commercial Retrofit is a comprehensive retrofit program designed to promote the installation of energy efficient equipment such as lighting, motors, and heating, ventilation and air conditioning (HVAC) systems, thermal envelope measures, and custom measures in existing buildings. All commercial, industrial, and institutional customers are eligible to participate. The Company offers technical assistance to customers to help them identify cost-effective efficiency opportunities, and pays incentives to assist in defraying part of the material and labor costs associated with the energy efficient measures.</p> <p>The Company also offers education and training, such as the building operator certification (BOC) training, to support</p>	<ul style="list-style-type: none"> • In 2020 the Company will use a targeted approach for chain restaurants (not participating in the National Chain Restaurant SEMP initiative), in Rhode Island. • The Company will provide a targeted offering for the Lodging/Hospitality customer segment for more comprehensive energy efficiency savings than has previously been achieved by this segment. • K-12 schools will be part of the State SEMP in 2020.

	<p>the implementation and adoption of energy efficiency.</p>	<ul style="list-style-type: none"> • New Lighting and HVAC demonstrations have been proposed in the 2020 that include, a high efficiency kitchen exhaust demonstration, enVerid, air filtration technology for HVAC savings and a comprehensive HVAC and Lighting controls demonstration.
<p>Small Business Direct Install (Funded by Electric and Gas)</p>	<p>The Small Business Direct Install Program provides direct installation of energy efficient lighting, non-lighting retrofit measures, and gas efficiency measures. Electric customers who consume less than 1,000,000 kWh per year are eligible to participate. There is no eligibility criterion for gas consumption. The program’s lighting and non-refrigeration measures are delivered through one labor and one product vendor selected through a competitive bidding process. The Customer share of the total project cost of a retrofit is discounted 15% for a lump sum payment or the customer has the option of spreading the payments over a two-year period, interest free.</p>	<ul style="list-style-type: none"> • The Company will also explore the door to door direct install/audit scheduling model in municipalities not participating in the Community Initiative with areas dense enough to support this type of effort. • In 2020, the Company will be working with community leaders and stakeholders to set appropriate goals for serving businesses in areas that have with lower incomes and those in Environmental Justice zones. A number of tools will be used in this effort including past participation data and EPA’s Environmental Justice Screening and Mapping Tool
<p>Commercial Pilots (Funded by Electric and Gas)</p>	<p>In 2020, the Company will expand the Commercial and Industrial Demand Response gas pilot that was launched in 2018-2019 winter, to address grid constraints and help provide reliable service to our customers. In addition, the</p>	<ul style="list-style-type: none"> • In 2020, the Company will expand the Commercial and Industrial Gas Demand Response pilot that was launched in 2018-2019 winter to address grid

	<p>Company will continue the Zero Energy Buildings pilot in 2020 and focus on such areas as: training and education for the building industry, benchmarking and building energy labeling effort. The Company will also look to partner with building owners and developers on potential Zero Energy Building projects in 2020.</p>	<p>constraints and help provide reliable service to our customers.</p> <ul style="list-style-type: none"> The Company will continue the Zero Energy Buildings pilot in 2020 and focus on such areas as: training and education for the building industry, benchmarking and building energy labeling effort. The Company will also look to partner with building owners and developers on potential Zero Energy Building projects in 2020.
<p>C&I Connected Solutions (Demand Response) (Funded by Electric)</p>	<p>C&I Connected Solutions is technology agnostic and provides an incentive to C&I customers for verifiable shedding of load in response to a signal or communication from the Company. In 2020 the program has a goal of enrolling 49 MW.</p>	<ul style="list-style-type: none"> In 2020 the program has a goal of enrolling 49 MW. In 2020 the Company will incent the performance of customers adopting innovative and emerging demand reduction technologies, like battery storage.

Attachment 2 includes descriptions of these programs, along with what is new in 2020. Included in the description of each program are proposed changes from 2019 that are intended to help meet the savings targets for 2020.

viii. **Portfolio-Wide Strategies**

i. **Community-Based Initiative**

The Rhode Island Community-Based Initiative is the Company’s energy efficiency awareness campaign that drives program participation by deep municipal engagement with residents and small businesses through the advocacy of local officials. The Company provides goals to the municipality to drive end-customer adoption of efficiency measures and small business program projects. These municipalities, in turn, work to achieve the goals with the help of volunteers and promotions at local events. Small businesses are invited to workshops organized in conjunction with the local chamber of commerce or other local business organizations. These workshops will inform customers about the

National Grid Small Business Direct Install Program, Commercial Property Assessed Clean Energy (C-PACE) financing, and demand response.

Start-up funding is provided to the municipality, along with comprehensive marketing toolkits and training to have a discussion about energy efficiency with their residents and small businesses. Frequent check-in calls allow the communities to speak with the Company regarding progress and share tactics and ideas with other participating municipalities. Events are staffed throughout the campaign at various events and school functions. At the end of the year, municipalities earn grant monies directly correlated to the increase in volume of the identified goal. These funds are then utilized for energy saving projects on a municipal property, or on educational energy programs for community members.

In the first quarter of 2020, the Company will recruit Rhode Island municipalities based on historical performance of residential and small business program participation as well as possible demand response opportunities. As the Company has run this successful effort since 2013, prior participating communities may again be invited to take part. The initiative will continue to coordinate with the System Reliability Procurement (SRP) team to determine if the RI System Data Portal (Portal) which was developed in 2018 could be a valuable tool for the use of educating towns, as well as the company in recruiting municipal participation.

A continued focus for 2020 will be the promotion of new technologies within the communities such as cold climate mini-split heat pumps, Wi-Fi Thermostats, and demand response offerings. The Company will also consider including locational program incentives to drive increased participation in a measure that may be underrepresented within that community.

Small Business project promotions were included in the prior year and an increased focus will be placed on recruiting small business participation in 2020. Specifically, the company will utilize the "Main Street" approach through which the Company's lead vendor for the SMB program will go door to door in the community's main section of storefront to offer direct install measures on-site and propose larger energy saving opportunities upon a follow up visit.

ii. Workforce Development

National Grid is committed to promoting leadership in the community, various market sectors, trade organizations and associations by providing and sponsoring initiatives and outreach efforts for education, training and workforce development.

As in previous years, the Company will continue to support opportunities to inform customers and trade allies/vendors/contractors, which serve various market sectors, about existing and new or emerging energy efficient technologies, building systems and design, building energy codes and standards, improved installation practices, and up-to-date operation and maintenance (O&M) procedures. By integrating local, regional, and national educational and training initiatives throughout National Grid's various C&I programs, the Company hopes to build awareness about the benefits of energy efficient technologies, market National Grid's energy efficiency programs, provide expertise and experience on the need for integrated design, and improve construction and installation practices for an existing or new construction building project. This includes co-sponsorship of TEC-RI's training sessions. Information about National Grid's energy efficiency programs is also presented to members of several professional organizations including the Electrical League of Rhode Island and ASHRAE. Deeper energy savings, as well as other non-energy benefits, can be achieved for any given customer project when the customer, designer/engineer, or contractor/installer is able to express or share knowledge about an energy efficient technology, the associated costs, and energy savings potential.

Energy Efficiency Jobs One of the most evident economic benefits from energy efficiency programs in Rhode Island is the number of associated jobs in the energy sector. Each year, National Grid reports on the number of jobs associated with its energy efficiency programs in Rhode Island. The report is included in National Grid's Year-End Report, which is submitted to the PUC, and available on the Council's website. The 2018 report found that the energy efficiency programs supported 804 full-time equivalent (FTE) workers across 1,109 different firms, 73% of which were located in Rhode Island.

National Grid has conducted a number of workforce development activities throughout the state that it will continue in 2020. To help our contractors develop the skills needed to effectively deliver our programs, the Company conducts code training for residential new construction; in-field technical training for residential new construction; weatherization training for our Community Action Partners and their weatherization staff; and technical training for HVAC contractors. Additionally, the Company offers professional certifications for facility managers through a Building Operator Certification course, which teaches energy efficient techniques for optimizing energy management. Additional details of these offerings are included in Attachments 1 and 2.

The workforce report filed in the 2018 year-end report included a recommendation to "commission a comprehensive study of workforce labor and training needs for all future programs, including issues and barriers and strategies to mitigate them." The Company is committed to supporting a study on future workforce development. The completion of

the 2021 - 2026 Potential Study in early 2020 will provide much needed evidence regarding anticipated programmatic and measure shifts needed for the next three-year plan. After the completion of the potential study, followed by programmatic and strategy planning for the three-year plan, anticipated shifts in the energy efficiency market should then be more closely studied through a forward-looking workforce study after the completion of the three-year plan.

1) Building Operator Certification Training (BOC)

BOC Levels I & II include HVAC, lighting and building controls. Students gain knowledge of their own building by completing projects involving documentation of building equipment, systems and controls, benchmarking the building's performance by using ENERGY STAR® Portfolio Manager™, updating occupancy profiles, reviewing HVAC systems and operation, and mapping the facility's electrical distribution system. In addition, the course addresses maintenance of building systems, equipment troubleshooting, preventive maintenance, advanced electrical diagnostics, HVAC optimization, and information on National Grid's energy efficiency programs.

In 2020, the Company plans to support Building Operator Certification (BOC) training by holding at least two Level I BOC classes in Rhode Island and one Level II BOC class in Massachusetts. Classes will be held in the spring and the fall. The audience includes facility managers, operating engineers, building technicians, and maintenance mechanics. The course provides a core foundation across the various building systems and maintenance practices of a typical commercial building – class instructors encourage class participation. In addition to the knowledge gained by listening to the instructors and completing both in classroom as well as out of classroom projects, the participants benefit from networking and learning from each other's experiences with building maintenance and energy efficiency. Student satisfaction with the BOC training is high in that they would recommend it to others and their companies are likely to engage utility energy efficiency incentives for energy projects.

In addition to the classroom training, National Grid also sponsors BOC webinars for customers and staff. The webinars are on specific topics of interest to facility managers.

2) Code Compliance Enhancement Initiative (CCEI) Training

CCEI includes in-person classroom and hands-on trainings, webinar presentations, project-specific technical assistance circuit riding, and development and dissemination of documentation/compliance tools such as residential field guide, residential and commercial FAQs, technical bulletins, and case studies. CCEI focuses on ground-up new construction for residential and commercial buildings but also addresses additions,

renovations, and retrofits. More details on this training are included in the Large Commercial and Industrial Energy Efficiency Section under Building Energy Code and Appliance Standards.

3) Advanced Workforce & Channel Development

Online Trade Ally Training on Advanced Lighting Systems

Online Trade Ally targeted training, for Performance Lighting PLUS program, consolidates the best-of-class subject-matter expertise into one common platform with an electronic learning training program built to track the progress of participants. This online, on-demand learning platform complements face-to-face and webinar based education and is a proven way to meet the time demands of all trade allies. This online learning platform will provide efficient and effective education on Advanced Lighting Systems including controls and design. This online training is developed to increase program participation and improve program process. This training will target trade allies (ESCOs contractors), internal sales teams, vendors, architects, designers, manufacturers’ representatives, distributors and customers. The Online Trade Ally training platform was launched in 2019 and will continue in 2020. The platform is managed by a vendor, who will also track participation through the online training platform.

Utility Benefits	Trade Ally Benefits
<ul style="list-style-type: none"> • Automates onboarding tasks • Deploys program changes faster • Pushes fresh content to engage allies • Provides metrics for ally tiering programs • Shares in industry-provided content • Uses portal customized with utility branding • Increased energy savings from knowledgeable trade allies 	<ul style="list-style-type: none"> • Offers training access organization-wide • Educates all staff to increase project sales • Affords on-demand training when needed • Offers accredited CEU and certifications • Aligns real-time trainings with program changes • Recognizes achievement with rewards • Reports real-time metrics to track progress

4.) Developing Workforce for Electrification

HVAC Check Training provides technicians with skills to calculate proper airflow and charge protocols and to ensure that electric heating/cooling equipment operates according to manufacturer’s specifications. These skills are essential for the success of the decarbonization of the heating sector, also referred to as electrification of the heating sector.

Through the RI EE Residential HVAC program, HVAC Check training is offered to contractors and trade schools that are interested in being approved to install heat pumps and being listed on the program’s Heating and Cooling Program Approved Contractor List. The training provides participants with skills to calculate accurate equipment sizing, installation best practices and verification, distribution system improvement, quality control and customer education.

In addition to heating and cooling equipment training, the Decarbonization of the Heating Sector relies heavily on other RI EE program services including, Home Energy Assessment and weatherization, both of which require trained professionals. Therefore, as we anticipate the growth of the electric heat market, we are planning to match that growth with the professional resources needed to complete the prerequisites of the electric heat program.

The Company will continue to identify workforce development opportunities by coordinating and collaborating with RI OER, RI Oil Heat Institute, Northeast Energy Efficiency Partnerships (NEEP), , and other stakeholders.

ix. **Participation**

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Each program described in this Plan seeks to drive customer participation to deliver the benefits of energy efficiency to customers throughout Rhode Island. The Plan is designed to provide equitable access to savings and programs across sectors and market segments. For 2020, the Company will continue to plan and report participation in ‘net’ terms, which takes into account free-ridership and spillover, which are commonly referred to as net-to-gross factors. This method of accounting for participants aligns participation numbers with energy savings numbers, which are already recorded in net terms. This approach provides a more accurate connection between energy savings and the number of customers who benefit from efficiency programs. Planned participation estimates are included in Attachment 5, Table E-7 and Attachment 6, Table G-7.

The following table describes the definitions for how National Grid projects, tracks, and reports participation in the efficiency programs.

Table 8: Participation Definitions

Fuel	Sector	Program	Participation Unit
Gas	Commercial & Industrial	Large Commercial New Construction	Unique Billing Account
		Large Commercial Retrofit	Unique Billing Account

Fuel	Sector	Program	Participation Unit	
		Small Business Direct Install	Unique Billing Account	
		C&I Multifamily	Housing Units	
	Income Eligible Residential	Single Family – Income Eligible Services	Unique Billing Account	
		Income Eligible Multifamily	Housing Units	
	Residential	Energy Star® HVAC	Unique Billing Account	
		EnergyWise	Unique Billing Account	
		EnergyWise Multifamily	Housing Units	
		Home Energy Reports	Unique Billing Account	
		Residential New Construction	Housing Units	
	Electric	Commercial & Industrial	Large Commercial New Construction	Unique Billing Account
			Large Commercial Retrofit	Unique Billing Account + Unique Customer names from Upstream Lighting
			Small Business Direct Install	Unique Billing Account
		Income Eligible Residential	Single Family – Income Eligible Services	Unique Billing Account
			Income Eligible Multifamily	Housing Units
		Residential	Energy Star® HVAC	Unique Billing Account
EnergyWise			Unique Billing Account	
EnergyWise Multifamily			Housing Units	
Home Energy Reports			Unique Billing Account	
Residential New Construction			Housing Units	
ENERGY STAR® Lighting			Estimated Housing Units	
			ENERGY STAR® Products	Number of Rebates

The Company will estimate the number of unique participants for each program. For some programs such as ENERGY STAR® Lighting and ENERGY STAR® HVAC, one measure does

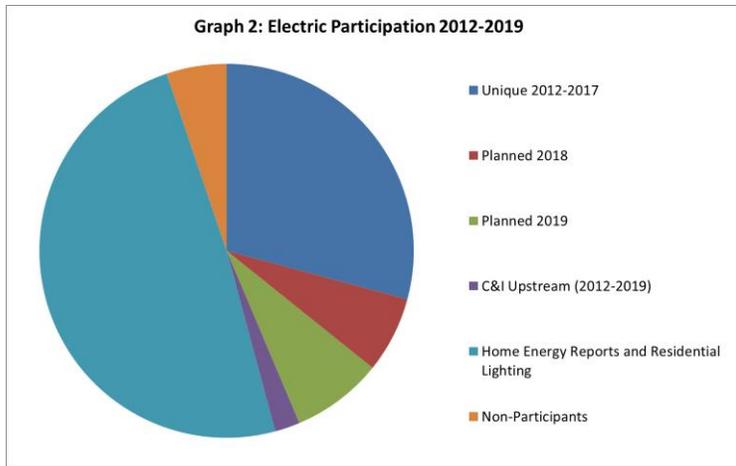
not necessarily equal one participant. This is because a customer can purchase more than one measure. Therefore, the Company also considers the previous year's unique accounts to savings ratio in order to estimate the planned unique participants in 2020. This method allows for a better estimation of unique participants but can make it more difficult to compare planned numbers across years.

In 2020, the Company will continue to drive participation through two main pathways – targeted programs and broad based programs. Targeted programs include the Company's retrofit, new construction, product rebate, and direct install initiatives. These programs serve to drive deeper savings to targeted customer segments and offer a wide array of energy efficiency measures. The Company also reaches broad participation by promoting products upstream and Home Energy Reports. These broader based programs provide value by reaching a wide and diverse set of customers, helping to provide more customers with access to energy savings, as well as acting as a gateway to drive participation in other National Grid energy efficiency programs.

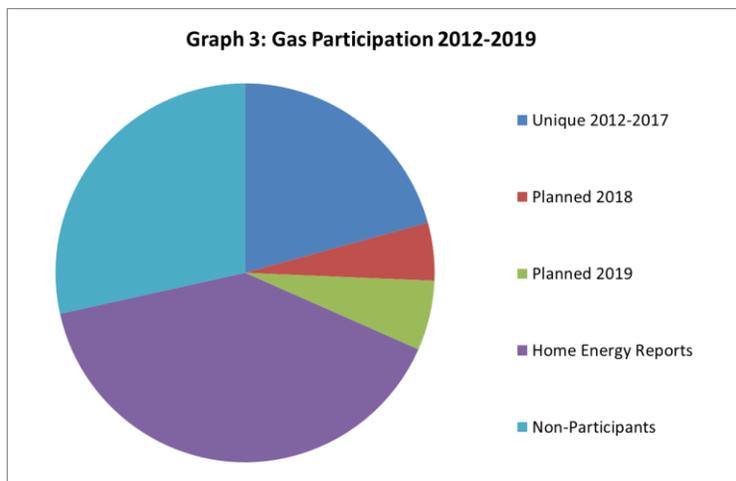
An analysis of unique participation since 2012 is detailed in Graphs 2 and 3 below. These graphs highlight that the Company has made steady progress with reaching new participants each year. From 2012-2018 the Company served approximately xx% of its electric customers and xx% of its gas customers from its targeted programs at least once (these graphs have removed duplicate participation across programs and across years from 2012-2018). When Home Energy Reports and C&I upstream lighting participation are added to these counts, a total of 80% of electric customers and 61% of gas customers participated over this period.²⁴ Home Energy Reports are included here because the program offers significant savings and benefits to customers as well as drives customers to participate in other energy efficiency programs.²⁵ Planned 2019 and 2020 participants are also included in these graphs for illustrative purposes. Importantly, planned participants in 2019 and 2020 may have participated in prior years. In the 2019 Year-End report, the Company will remove any participation overlap to report unique 2019 participants.

²⁴ It is not possible to track residential lighting participation by customer account but it is assumed that there is overlap between Home Energy Report participants and residential lighting participants. Therefore, for the purpose of estimating unique participation for illustration in these graphs, only include Home Energy Report participation is included in the 80%.

²⁵ The full participation analysis can be found in Docket 4755 - National Grid Electric and Gas Energy Efficiency Programs 2018 Year-End Report, filed May 15, 2019.



Commented [HR7]: Graph to be updated in 3rd draft



Commented [HR8]: Graph to be updated in the 3rd draft

In 2020, the Company will continue its efforts to reach customers that have never participated in its energy efficiency programs. The Company will also continue its efforts to reach customers that have previously participated in its energy efficiency programs but who can still benefit from the installation of additional energy efficiency measures. Many of the unique participants captured above are still eligible for additional programs. For example a participant in the EnergyWise Single Family program may participate in the HVAC program. In 2020, the Company will enhance the Customer Call Service experience to promote energy efficiency programs to customers.

The Company will continue to deliver innovative strategies to increase customer participation and reach customer segments that are historically underrepresented. Also,

the Company will continue to track participation trends and will again provide a detailed analysis in its 2019 Year-End Report showing additive and cumulative portfolio participation.

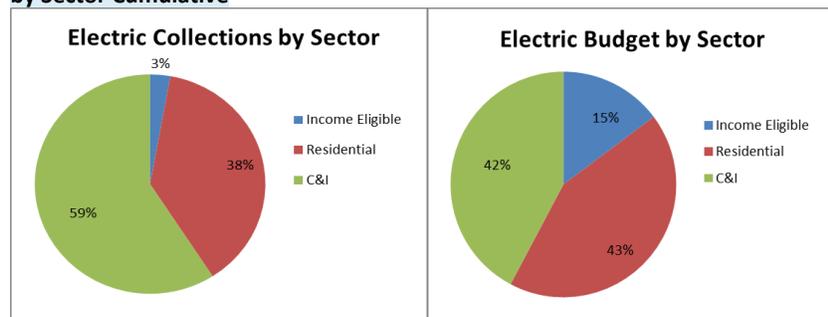
x. **Equity**

The Annual Plan is designed to reach as many customers as possible and to provide energy efficiency services to all customer classes. Since each customer pays into the energy efficiency programs, the Company designs programs to allow for all customers to participate and receive benefits. All customers, regardless of participation, benefit from energy efficiency because of lower future costs of energy, as demonstrated through the bill impact analysis as described in detail in Attachment 7.

The pie charts below are a graphical representation of Attachments 5 and 6, Tables E-1 and G-1. The Company first provided these charts at the 2017 Annual Plan hearing and has since included them in Annual Plans to better display the difference between customer class rates, budgets, and savings.

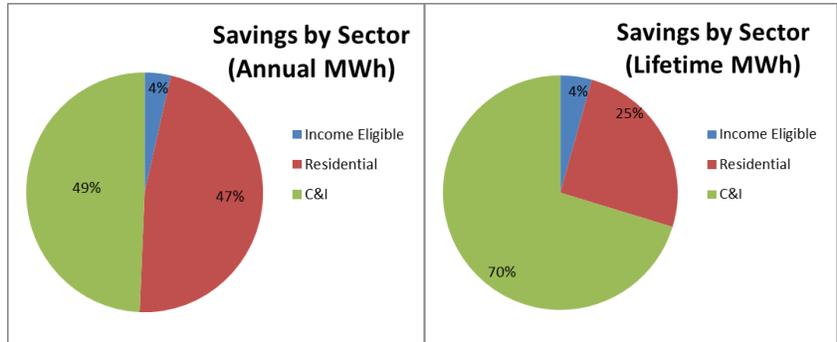
As shown in Graph 4, there is approximate parity between the collections by a customer class and its resulting budget and savings in the electric portfolio. The only exception is the income-eligible sector where there is an established agreement amongst the Parties that the residential and C&I customer classes use part of its collections to help cover the income-eligible sector funding needs. The income-eligible budget is higher compared to its savings due to several factors: incentives are 100% of the cost, the programs are more expensive because they are delivered in-home (compared to at retail sites or via rebates) which requires more labor and management, and the programs have fewer economies of scale (compared to C&I).

Graph 4: Graphical representation of Attachment 5 Table E-1 and total Electric Savings by Sector Cumulative



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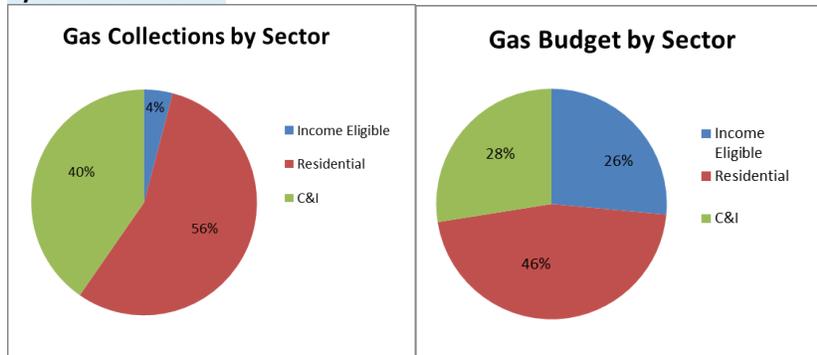
Commented [HR10]: Graph to be updated in the 3rd draft

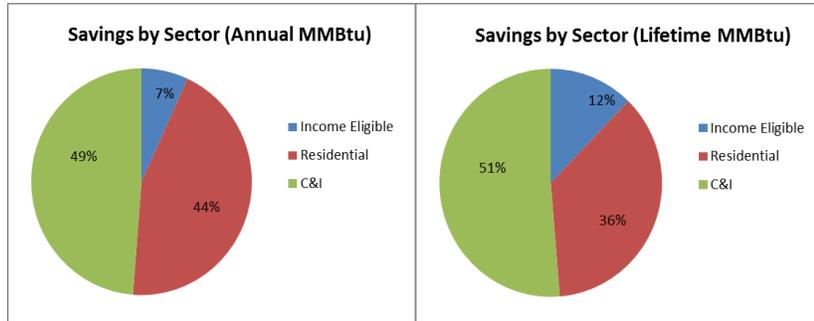


Commented [HR11]: Graph to be updated in 3rd draft

For the gas portfolio, there is also parity between the collections by a customer class and the resulting savings. There is less parity between budgets and savings. This is due to several factors. First, the energy efficiency program charge varies by customer segment, which changes collections. Second, C&I projects tend to create more savings per dollar. This is due to larger economies of scale, larger projects, different delivery channels that require less labor or management and are more cost-effective, evaluation factors such as free-ridership and spillover, and different customer opportunities.

Graph 5: Graphical representation of Attachment 6 Table G-1 and total Electric Savings by Sector Cumulative





Commented [HR12]: Graphs to be updated in the 3rd draft

xi. Pilots, Demonstrations and Assessments

In accordance with Docket No. 4600-A PUC Guidance Document, the Plan includes a description of pilots in Attachment 8. Descriptions of demonstrations and assessments can be found in Attachment 2 for Commercial and Industrial programs. At this time, the Company does not have any Residential Demonstration and Assessments.

As defined in the Docket 4600-A Guidance Document, “A pilot is a small scale, targeted program that is limited in scope, time, and spending and is designed to test the feasibility of a future program or rate design. It is incumbent upon the proponent of a pilot to define these limits in a proposal for PUC review. Ideally, a pilot can provide net benefits and achieve goals, but the primary design and value of a pilot is to test rather than to achieve.”²⁶

For actions in the Plan that do not fall under the Docket 4600-A definition of pilots, the Company includes demonstrations within the programs because the Company expects that demonstrations will contribute savings to the programs in which they are offered and are included in costs, benefits, and savings and in the calculation of the shareholder incentive. A demonstration tests a new technology or solution that is delivered as part of an existing program. A technical assessment has estimated the savings and determined that the measure is likely to be cost effective. An assessment tests a measure, a bundle of measures, or a solution, that can be delivered as part of existing program where the savings are not known but will be explored as part of the assessment. Assessments do not contribute to savings of the programs in which they are offered and are not included in costs, benefits, and savings and in the calculation of the shareholder incentive.

In 2019 the Company is establishing a dedicated team within the Customer group that will be responsible for testing new technologies, go-to market strategies, and enhancements within established programs. The goal of the team is to test, develop and

²⁶ Docket No. 4600-A PUC Guidance Document, October 27, 2017. Section V. Pilots.

determine scalability of new energy efficiency and demand response solutions for customers and achieve savings targets in the future.

The new team will lead all energy efficiency and demand response demonstrations, assessments and pilots in Rhode Island. They will develop concepts, plan and design, test and coordinate evaluations for the demonstrations, assessments and pilots.

The evaluation pathway for demonstrations, assessments and pilots is based on each demonstration, assessment, or pilot's scale, budget, type, and the availability of external data. The Company's evaluation team is engaged early on at the concept stage and determines whether the demonstration, assessment, pilot, needs and independent evaluation, a vendor evaluation or no evaluation at all. The purpose of the evaluation is to determine impact and process learnings such that they can be used to establish a new measure, go-to market strategy or new program.

7. Cross Docket Coordination

i. *Coordination with the Grid Modernization Plan (GMP) and Advanced Metering Functionality (AMF)*

The Company is progressing toward filing a Grid Modernization Plan (GMP) as well as an updated Advanced Metering Functionality (AMF) business case as directed to do so in the Docket 4770 Amended Settlement agreement. In late 2018 and throughout 2019, the Company engaged a subcommittee as part of the PST Advisory Group in order to derive valuable input from stakeholders as it progressed the development of both the GMP and the updated AMF Business case.

Through this process the Company's AMF team has worked closely²⁷ with the Energy Efficiency team to ensure that the Company has a comprehensive view of the benefits and impacts of the roll out of AMF. Specifically, the Company worked to ensure that the benefits estimated in the AMF BCA would constitute a new baseline of savings upon which future energy efficiency goals are based. Future Energy Efficiency programs will benefit from the increased visibility into customer usage. This visibility will allow for improved marketing, more personalized energy-saving offers for customers, and more targeted energy-saving measure deployment.

In addition to the calculation of benefits, the Company also examined the overlap of costs. After the launch of AMF, the Company still anticipates energy efficiency programs will

²⁷ At the May 2019 Energy Efficiency Technical Working Group, the AMF team presented to energy efficiency stakeholders so that they were aware of the coming technology and possible benefits and impacts to energy efficiency plans.

continue to offer customer incentives for in-home/in-business technologies, such as Wi-Fi programmable thermostats and smart appliances to drive the achievement of additional incremental energy savings to meet annual energy savings targets. The Company recognizes that the future energy efficiency Plans will include the total participant costs (i.e., ratepayer-funded rebates and customer contribution costs) associated with such measures in its BCA methodology.

While the Energy Efficiency, GMP and AMF teams have been coordinating closely through this filing process, the need to bifurcate savings and costs associated with these plans will not arise until actual AMF deployment begins and data is collected and visualized for customers in later years. Therefore, the important overlap and distinction between GMP, AMF and the energy efficiency Plans will most likely not arise until the Company's next 3-year EE Plan (2021-2023), when the Company anticipates a more robust discussion of evaluation methodologies and other key considerations. In the interim, the Company will continue to work with the Energy Efficiency Technical Working Group to ensure all stakeholders are aware of this future transition.

ii. **System Reliability Procurement**

In a contemporaneous filing, the Company is submitting its System Reliability Procurement (SRP) Annual Report for 2020 for the PUC's review and consideration. The SRP Annual Report describes the strategies, goals, and funding request for SRP in 2020. The SRP Factor is included as part of the total energy efficiency program charge shown on line 14 of Table E-1 in Attachment 5. For 2020, the charge is negative \$xxxx due to a positive SRP fund balance.

Commented [RJ13]: To be updated in 3rd draft.

The Company continues coordination between SRP and customer offerings in the Annual Plan to ensure that efforts, projects, and programs are optimal and not duplicated. The Company coordinates SRP and energy efficiency planning efforts so that opportunities for targeted energy efficiency is considered in NWA opportunity development. Examples could include enhanced or targeted community initiatives or enhanced marketing for ConnectedSolutions. The Company also coordinates communications between the SRP Technical Working Group to the Energy Efficiency Technical Working Group.

The Company will look for opportunities where it can target energy efficiency to create multi-dimensional benefits for customers. for example, where can the Company target increased deployment of demand-side resources that provides benefits to both customers and the electric grid through lowering distribution system peak or potentially deferring part of all of an infrastructure improvement. The Company can utilize the increased visibility from the RI Data System Portal to

target energy efficiency and demand response in areas that would benefit from load reduction. In addition, energy efficiency and demand response should be examined for future non-wires alternatives to determine if these resources can be deployed as part of a solution.

8. Advancing Docket 4600 Principles and Goals

Along with the quantitative benefits detailed in the Plan, as measured by the RI Test, the energy efficiency investments and innovation planned for 2020 also advance the Docket 4600 principles and goals.²⁸

The Docket 4600-A Guidance Document directed that “the proposing party must provide accompanying evidence that addresses how the proposal advances, detracts from, or is neutral to each of the stated goals of the electric system.”²⁹

To meet this directive, the Company describes how the Plan either advances, detracts, or remains neutral on achieving the Docket 4600 goals for the electric system in Table 9.

Table 9: Docket 4600 Goals for the Electric System

4600 Goals for Electric System	Advances/Detracts/Neutral
Provide reliable, safe, clean, and affordable energy to Rhode Island customers over the long term.	Advances: The Plan gives customers tools to reduce their energy consumption. The safest, most reliable, most affordable energy, is energy that is never used. Lowering energy consumption avoids investments in the installation, upgrade, or replacement of transmission and distribution infrastructure, and reduces strain on the system.
Strengthen the Rhode Island economy, support economic competitiveness, retain and create jobs by optimizing the benefits of a modern grid and attaining appropriate rate design structures.	Advances: The Plan will create significant economic benefits in Rhode Island. The Company expects that investments made in energy efficiency under this Plan will add 280.6 million to Rhode Island’s state gross domestic product (GDP)
Address the challenge of climate change and other forms of pollution.	Advances: The Plan will avoid over 1.03 million tons of carbon over the lifetime of the installed measures as well as reduce other pollutants associated with the

²⁸ PUC Report and Order No. 22851 accepting the Stakeholder Report. Written Order issued July 31, 2017.

²⁹ Approved final clean version of Guidance Document 10/27/17.

	generation and combustion of electricity, natural gas, and delivered fuels.
Prioritize and facilitate increasing customer investment in their facilities (efficiency, distributed generation, storage, responsive demand, and the electrification of vehicles and heating) where that investment provides recognizable net benefits.	Advances: The Plan provides incentives for customers to invest in cost-effective energy efficiency measures in their facilities and participate in demand response programs.
Appropriately compensate distributed energy resources for the value they provide to the electricity system, customers, and society.	Neutral
Appropriately charge customers for the cost they impose on the grid.	Neutral
Appropriately compensate the distribution utility for the services it provides.	Advances: The shareholder incentive contained in this Plan compensates the Company for achieving the energy savings goals through delivering cost-effective energy efficiency programs to customers.
Align distribution utility, customer, and policy objectives and interests through the regulatory framework, including rate design, cost recovery, and incentive.	Advances: The Plan aligns Company, customer, and policy objectives and interests by incentivizing energy savings measures that enable customers to manage and reduce their energy consumption, which in turn contributes to the greenhouse gas reduction goals of the Resilient Rhode Island Act of 2014, and Power Sector Transformation goals, while allowing the Company to earn a shareholder incentive.

9. Funding and Budgets

Funding, budgets, goals, and cost-effectiveness information is provided in Attachment 5 for the proposed electric energy efficiency programs and in Attachment 6 for the proposed natural gas energy efficiency programs.

i. **Annual Plan Funding Sources**

The sources of funding and the amounts of the funding proposed for the cost-effective 2020 EE Programs are shown in Table E-1 for electric programs and Table G-1 for natural gas programs.

The sources of funding for the 2020 electric programs are shown in Attachment 5, Table E-1. To collect these funding sources for the 2020 cost-effective programs, the Company proposes: (1) one line on the customers' bill labeled "Energy Efficiency Charge" at \$0.01449 per kWh, as calculated in Attachment 5, Table E-1 (composed of the existing energy efficiency program charge of \$0.01124 per kWh plus a fully reconciling funding mechanism charge of \$0.00325 per kWh in accordance with the requirements of R.I. Gen. Laws § 39-1-27.7); (2) projected Large C&I commitments from 2018, if any; (3) projected carryover of the year-end 2018 fund balance, as applicable, including interest at the rate in effect for customer deposits; (4) forecast revenue generated by ISO-NE's Forward Capacity Market (FCM); and (5) anticipated revenues generated through RGGI permit auctions. Funding sources do not include revolving loan funds.

The sources of funding for the 2020 natural gas programs are shown in Attachment 6, Table G-1. The Company proposes that the 2020 budget should be funded from the following sources: (1) one line on the customers' bill labeled "Energy Efficiency Charge" at \$1.077 per dekatherm for residential customers and \$0.842 per dekatherm for non-residential customers as calculated in Attachment 6, Table G-1 (composed of the existing energy efficiency program charge of \$0.715 per dekatherm plus a fully reconciling funding mechanism of \$0.362 per dekatherm for residential customers and the existing energy efficiency program charge of \$0.420 per dekatherm plus a fully reconciling funding mechanism of \$0.422 for non-residential customers in accordance with the requirements of R.I. Gen. Laws § 39-1-27.7); (2) projected carryovers or under-recoveries of the year-end 2018 fund balance, including interest at the rate in effect for customer deposits; and (3) low income weatherization funding in base rates. Funding sources do not include revolving loan funds.

The 2020 budgets for cost-effective electric and natural gas efficiency investments are dependent on a number of projections that inform the amount of funding, including projections of electricity and natural gas sales, year-end 2019 large C&I program commitments, capacity payments received from ISO-NE (electric only), and year-end 2019 spending. The Company estimates that the electric projected fund balance at year-end 2019 will be negative \$6.1 million, as shown in Attachment 5, Table E-1; the gas fund balance at year-end 2019 is estimated to be negative \$3.3million, as shown in Attachment 6, Table G-1.

It is likely that the actual year-end 2019 fund balance will be higher or lower than the dollar amounts projected in this Plan. To ensure that the 2020 Energy Efficiency Charge reflects the most current fund balance projections possible, the Company proposes to submit revised Tables E-1 and G-1 on December 2, 2018 to include several additional months of actual expenses and revenues in the calculation of the Charge. The Company proposes to submit revised tables on December 2, 2018 and not at the end of the year to provide the PUC with time to review the Company's proposed charges in advance of the Annual Plan hearing. This would allow the charges, if approved, to have an effective date of January 1, 2020. This will allow the Company to begin collecting the most accurate charge possible at the start of the program year and avoid any market confusion surrounding the status and implementation of the 2020 energy efficiency programs. If the actual year-end 2019 fund balance as filed in the Year-End Report on May 1, 2020 is higher or lower than that amount projected in the December 3, 2019 revised Tables E-1 and G-1, any deviation will be fully reconciled in the next program year in accordance with the requirements of R.I. Gen. Laws § 39-1-27.7.

Other considerations regarding funding sources include:

i. ISO-NE Capacity Market Revenue

Consistent with the PUC's Standards, Annual Plan, and PUC decisions regarding Annual Plans since 2008, the Company and the Parties agree that kW-demand savings achieved via the electric energy efficiency and Combined Heat and Power programs continue to participate in the FCM as Passive On-Peak Demand Resources. The Company will manage and direct the revenues by bidding the demand savings attributed to energy efficiency measures and Combined Heat and Power facilities in the FCM and managing the associated capacity resources to maximize the resulting FCM revenue. The revenues from measures installed through this Plan, as well as all previous Plans, will continue to be reinvested in energy savings for the life of the measure.

The Parties fully agree that the Company should recover all prudently incurred FCM expenses from ISO-NE capacity-payment revenue generated by the demand savings from efficiency programs represented by the Company. The Company expects that capacity payments received from the ISO-NE will exceed its administrative and Measurement and Verification (M&V) compliance costs of participation in the FCM, and will result in additional funds being made available to fund efficiency programs for customers. If these participation costs exceed the capacity payments, the Parties agree that the Company may recover its prudently incurred costs from the energy efficiency program fund. The Parties reserve the right to examine the actions and expenses of the Company to ensure

that only prudently incurred expenses are deducted from ISO-NE capacity payments or the energy efficiency program fund.

In addition, as part of the FCM, all qualified auction participants are required to post Financial Assurance to provide security that the promised resource will deliver the promised MW at the promised time. If, as a result of circumstances beyond the Company's control,³⁰ the Company is unable to provide all or a portion of the megawatts of capacity proposed in its qualification packages and capacity auction bids, some or all of the financial assurance monies would be forfeited.

ii. Exceptions to the Natural Gas Energy Efficiency Program Charge

All natural gas used for distributed generation projects approved since 2014 will be subject to the natural gas energy efficiency surcharge.³¹

The 2006 Act allows the PUC to exempt natural gas used for manufacturing processes from the energy efficiency surcharge where the customer has established a self-directed program to invest in and achieve best effective energy efficiency in accordance with a plan approved by the PUC and subject to periodic review and approval by the PUC. Consistent with prior PUC decisions, the Parties have developed recommendations for a process under which a manufacturer may submit its self-directed program and the required annual reports for approval. The Parties recognize that this process may need to be reviewed and modified after the PUC has accumulated sufficient experience with these programs. Any customer that receives this exemption from the natural gas energy efficiency program charge will not be eligible to receive natural gas energy efficiency program services.

b. Budgets

The Parties agree that the portfolio of energy efficiency programs and services for 2020 will have an overall budget of approximately \$114.4 million for electric programs and \$34.8 million for natural gas programs. The Parties agree to segment the budget into three sectors: residential income eligible, residential non-income eligible, and commercial and industrial (C&I). Proposed sector and program budgets are provided in Attachment

³⁰ Such circumstances may include legislative action to alter the EE Program Charge or discontinue the Company's authority to implement the energy efficiency programs underlying the Qualifications Package or a PUC decision limiting the Company's role in bidding the demand savings acquired through program efforts into the FCM.

³¹ Natural gas used for distributed generation (excluding natural gas used by emergency generators) for distributed generation projects approved under the energy efficiency programs in 2013 and prior years - independent of the date those facilities become commercially operable - are not subject to the energy efficiency surcharge when natural gas used for that purpose can be clearly identified through uniquely metered use and when so requested in writing by the customer.

5, Table E-2 and Attachment 6, Table G-2. The derivations of the spending budget and implementation expenses are illustrated in Attachment 5, Table E-3 and Attachment 6, Table G-3. A comparison of these proposed budgets to the 2019 budget is provided in Attachment 5, Table E-4 and Attachment 6, Table G-4.

The Parties agree to review the status of budgets regularly to assess whether they are likely to be fully utilized. If not being utilized, the Parties agree to review the advisability of transferring funds to other programs where the money could be more effectively used. Fund transfer guidelines are presented in Section C, below.

The Company proposes to continue the practice of funding commitments that were established in the 2014 Plan, Docket 4451. Namely, the Company will continue to make commitments for projects with a projected incentive in excess of \$3 million. For all other projects, except those with incentives greater than \$3 million, there would be no commitment budget and the Company will fund and pay all incentives in the year in which they are completed. There are no commitments in the 2020

c. Transferring Funds

The Parties will regularly review the amount of funds needed and available for each program (as well as any changes to the overall fund balance, as discussed in Section III.A above) and will transfer monies as needed. Transfers during the program year may occur as follows:

1. Transfers within a Sector: For transfers of less than 20% of the originating program's budget, the Company can transfer funds from one program to another program or pilot in the same sector. For transfers of 20% or more of the originating program or pilot's budget, the Company can transfer funds from one program to another program in the same sector with the Division's prior approval. Upon seeking the Division's approval, the Company shall simultaneously notify the EERMC and OER. For all transfers in a sector, the Company will reflect changes in the quarterly report(s) following the transfer and the year-end report.
2. Transfers between Sectors. The Company can transfer funds from one sector to another sector with the Division's prior approval. Upon seeking the Division's approval, the Company shall simultaneously notify the EERMC and OER. If a transfer reduces the originating sector's budget by more than 20% in aggregate over the course of the program year, the transfer will also require PUC approval. For all transfers between sectors, the Company will reflect changes in the quarterly report(s) following the transfer and the year-end report.

3. Transfers among residential retrofit programs. The Company can transfer among EnergyWise, EnergyWise Multifamily, Income Eligible Multifamily, and C&I Multifamily (which are in different sectors) programs in order to achieve the overall savings goals of all programs. Although these are listed as separate lines in the program tables, they are essentially one program from an implementation standpoint. For all transfers between residential retrofit programs, the Company will reflect changes in the quarterly report(s) following the transfer and the year-end report.
4. For transfers requiring Division and/or EERMC, but not PUC approval, the Parties will inform the PUC of the transfers, both between sectors and within sectors, in a timely fashion.
5. The Company will not be permitted to adjust its goals or incentive target calculations as a result of any transfers between sector budgets. However, after any budget transfers between sectors are made, the sector spending budgets will be recalculated for the purposes of the shareholder incentive calculation.

d. Budget Management

It is possible that there could be deviations from the planned budget for 2020 that could occur during the program year. The Parties contemplate three scenarios, and have agreed to address them as follows:

1. The Company's expenditures and commitments for 2020 may exceed the total budget by up to 15% so long as a written explanation is provided to the EERMC and the PUC for any deviation and the expenditures and commitments are reasonably consistent with the original Annual Plan.
2. The Company agrees that, during 2020, if the Company anticipates that continued operation of its programs is likely to result in actual expenditures and commitments exceeding the total budget by more than 15%, the Company will seek a vote of approval from the EERMC at its next meeting. Following EERMC action, the Company will be required to obtain approval from the PUC for expenditures in excess of 15% higher than the total budget, which would be collected through reconciliation in the next year's energy efficiency program charge.
3. During a program year, if the Company did not anticipate that its actual expenditures and commitments would exceed the total budget by more than 15%, but actual expenditures and commitments do exceed such threshold, the

Company will bear the burden of demonstrating the reasonableness of its actions, including an explanation of why the over-spending occurred and how the expenditures and commitments are reasonably consistent with the original plan. Such demonstration would be required to be part of the 2020 Year-End Report, if not sooner.

In each of these three instances, the PUC retains its traditional ratemaking authority to review the prudence and reasonableness of the Company's actions.

e. Notification of large customer incentives

The Company will notify the PUC, OER, Division and EERMC of any energy efficiency incentive annual offer in excess of \$3 million for a measure. The notification will occur after the cost benefit screening and before the offer letter is finalized. The notification will include a detailed explanation of the customer's measure, including cost benefit screening, minimum requirements documents and a technical assessment study, if available. The purpose of the notification is to transparently present the Company's due diligence on the measure in accordance with the standards for Energy Efficiency.

To prevent customer delays and to facilitate the Company's ability to meet customer expectation and annual energy savings targets, the OER, EERMC and Division agree to ask questions and provide comment on the project within thirty days. The Company through its own discretion may proceed with an incentive offer. The incentive, and any other related proposals will be authorized to proceed after thirty days from the date on which the Company notified the PUC, OER, Division, and EERMC of the incentive unless the PUC suspends the filing and/or issues an order within such 30-day period to extend the time for purposes of further review.

10. Goals and Cost-Effectiveness

The Company has projected cost-effectiveness for the proposed 2020 programs using the RI Test as required by the Standards. The RI Test requires that the total lifetime savings from the efficiency measures will exceed the total costs of the measures (i.e., program and customers' costs).

As provided for under the Standards, benefits include primary fuel energy savings (electricity and natural gas), the value of other resource (fuel and water) benefits, price effects, non-embedded greenhouse gas reduction benefits, economic development benefits, non-embedded NO_x reduction benefits, value of improved reliability and non-energy impacts (NEIs). Costs include all projects costs, program planning and administration, sales, technical assistance and training, evaluation, and the shareholder

incentive. To illustrate the detailed components of the RI Test as well as the sources of the values, the Company has provided Attachment 4.

Two key supporting documents for cost effectiveness are the Technical Reference Manual and the Avoided Cost Study. For the Annual Plan, the Company developed the 2020 Rhode Island Technical Reference Manual (TRM), which documents the savings or savings algorithms and costs for measures proposed to be offered through its programs in 2020. The TRM identifies the sources for the savings estimates: evaluation studies, engineering analyses, and/or other research. This TRM is a public document and was provided to the EERMC and its consultants to support and facilitate the determination of the Plan's cost-effectiveness. The TRM is reviewed and updated annually to reflect changes in technology, baselines, and evaluation results.

The cost-effectiveness analyses of the proposed programs use avoided energy supply costs that were developed by Synapse Energy Economics as part of the "Avoided Energy Supply Components in New England: 2018 Report" (2018 AESC Study) that was sponsored by all the electric and gas efficiency program administrators in New England and was designed to be used for cost effectiveness screening in 2019 through 2021.³² The avoided costs reflect current and expected market conditions and are highly influenced by the cost of fossil fuels and expectations about ISO-NE's forward capacity market. Company-specific transmission and distribution capacity values are also included. The avoided costs from the report used for 2020 are shown in Attachment 5, Table E-8 and Attachment 6, Table G-8. There were several noted changes to the avoided costs in the 2018 AESC Study (Study).

The Study found lower avoided costs of energy due to sustained low natural gas prices at national hubs and lower estimated costs of complying with the Regional Greenhouse Gas Initiative (RGGI). Avoided capacity costs were also lower due to changes in market rules and a lower estimate for the cost of new entry. Avoided costs of natural gas were lower based on shale gas breakeven prices. Avoided costs for fuel oil and other fuels increased. There was also an increase in the values for electric capacity demand reduction induced price effects (DRIPE) and oil DRIPE, where these were estimated to be non-existent or were not calculated in AESC 2015 Study. The Study also quantified new benefits for non-embedded NO_x reduction benefits, value of improved reliability, and avoided pool transmission facilities (PTF) costs. Due to all these factors, the avoided costs benefits have increased in 2020 compared to 2018.

³² The report is available online at: <http://ma-eeac.org/studies/special-cross-sector-studies/>. This study forecasts avoided costs for three years, compared to prior studies which developed avoided costs applicable to a two-year period.

Attachment 5, Table E-5 and Attachment 6, Table G-5 provide the calculations of 2020 program year cost-effectiveness. Attachment 5, Table E-6 and Attachment 6, Table G-6 show the energy savings goals based on the proposed budgets. Attachment 5, Table E-7 and Attachment 6, Table G-7 show a comparison of the goals with the approved program goals from 2019. Attachment 5, Table E-5 shows that the proposed portfolio of electric programs, including demand response, is expected to have a benefit/cost ratio of \$4.63, which means that approximately \$4.63 in benefits is expected to be created for each \$1 spent on the programs. Attachment 6, Table G-5 shows that the proposed portfolio of gas programs is expected to have a benefit/cost ratio of \$3.27, which means that \$3.27 in benefits is expected to be created for each \$1 spent on the programs. This increase in efficiency investment continues the progress of acquiring all energy efficiency resources that are cost-effective and lower cost than supply.

11. Bill Impacts

Commented [RJ14]: This section will be updated once the Bill Impact Analysis is completed for the 3rd draft.

In addition to energy efficiency being a cost effective investment for Rhode Island, an analysis of bill impacts from the proposed investment in energy efficiency indicates that the average Rhode Islander who participates in the electric programs will realize an annual bill reduction of XX% to XX% over the lifetime of the measure mix, depending on rate class. The average Rhode Islander who participates in the gas programs will realize a bill reduction of XX% to XX% over the lifetime of the measure mix depending on rate class.³³ The average Rhode Island consumer (blending participants and non-participants) will see an average annual bill reduction of xx% to xxx% for electricity over the lifetime of the installed energy efficiency measures, compared to no investment. For gas bills, the average Rhode Island consumer will realize a xxx% to xxx% bill reduction over the lifetime of the measure mix, depending on rate class. The bill impacts analysis uses models that were first used in the 2015 Plan and considers bill savings to participants compared to the incremental cost to all consumers of investing in energy efficiency in 2020. It also factors in that non-participants will benefit through avoided infrastructure investments as well as market effects. The full bill impacts analyses for electric and gas programs may be found in Attachment 7.

12. Measurement and Verification Plan

To verify the impacts that programs are having on energy savings, the Company hires independent consulting firms to regularly conduct evaluation studies as part of its

³³ Due to differences in the electric and gas Bill Impacts models, electric bill reductions indicate average annual bill savings over the lifetime of the measure mix, while gas bill reductions are the overall lifetime bill savings converted to 2019 present value and shown as a percentage reduction of the 2019 bill.

measurement and verification process. These evaluations incorporate industry standard methods such as engineering analysis, metering analysis, billing analysis, site visits, surveys, and market studies to realize the actual energy savings that particular measures are having. Every year, the results of the surveys are used to update the benefit-cost calculations during planning. Attachment 3 lists the evaluations that have occurred since 2007, that are still being used, and their influence on program planning.³⁴ The executive summaries of recently completed evaluations are submitted electronically to the PUC; executive summaries of evaluations completed in prior years are available in the dockets for previous years, or upon request.

Additionally, the M&V Plan for 2020 is presented in Attachment 3 and includes brief descriptions of each of the proposed studies. The areas proposed for study in 2020 have been chosen based on a number of factors: the relative amount of savings in that program or end use, the vintage of the most recent evaluation study, the relative precision of the recent evaluation study, and the available evaluation budget. In addition, some new program areas are designated for both impact and process evaluations. This list may be added to as the year progresses and different evaluation priorities are identified. In particular, the parties will consider the value of using evaluations from other jurisdictions as well as adding Rhode Island-specific impact or process evaluations, as appropriate, that will help inform the Company's efforts towards achieving the goals of least cost procurement.

The Office of Energy Resources is conducting a study to review and confirm reported energy savings. In 2019, \$275,000 was transferred to OER for the study and OER has not requested additional 2020 funding for the study. This study was legislated in Senate Bill 2500, enacted in June 2018.³⁵ The purpose of this study is to independently verify the energy savings of National Grid's energy efficiency programs and to review the evaluation, measurement, and verification (EM&V) process to ensure quality data, rigorous methods, and appropriate assumptions are being used. The legislation states that "The office of energy resources [*sic*], in consultation with the electric and gas distribution company and representatives referenced in §39-1-27.7(f)(2) shall be authorized to hire an energy consulting company or firm to carry out the energy efficiency verification study. The costs associated with this study, including, but not limited to, those associated with the consultant or firm contract and reasonable administrative costs incurred by the office in the execution of subsection (f) of this section, shall be

³⁴ The information in the Attachment is also intended to meet the specific requirement from the 2016 EE Program Plan to provide "a summary of evaluation results obtained since October 1, 2015, together with an attachment summarizing the impact of those results in planning the Company's 2019 programs."

³⁵ <http://webserver.rilin.state.ri.us/PublicLaws/law18/law18079.htm>

recoverable through the system benefit charge subject to commission approval. Funding shall be transferred from the electric and gas distribution utility to the office of energy resources upon request by the office.”³⁶

13. Reporting Obligations

- a. In 2020, the Company will provide quarterly reports to the EERMC, the Division, OER, the Collaborative, and the PUC on the most currently available program performance for both natural gas and electric efficiency programs. These reports will include a comparison of budgets and goals by program to actual expenses and savings on a year-to-date basis, and a status report on revolving loan funds. The Company will also coordinate reporting of loan funds with the Rhode Island Infrastructure Bank. The reports will also include a brief summary of program progress and will highlight issues by sector for EERMC, Division, OER, and Technical Working Group attention. Within the C&I sector, there will be separate highlighting of large and small customer program progress and issues. Beginning in the second quarter, the quarterly reports also include a forecast of expected results.
- b. In 2020, for months during which quarterly reports are not produced, the Company will provide to the EERMC, the Division, and the Collaborative monthly summaries of year-to-date spending and savings and results by sector.
- c. The Company will provide to the Parties and file with the PUC its 2020 Year-End Report no later than May 1, 2021. This report will include achieved natural gas and electric energy savings in 2020 and earned incentives for 2020.
- d. The Company will provide the Parties with a summary of evaluation results obtained since October 1, 2016, including a description of the impact of those results in planning the Company’s 2020 programs, in the Plan to be filed by October 15, 2019.

14. Incentive

a. Proposed Modification

The anticipated transformation of energy efficiency delivery during the next three years and the continued saturation of low-hanging, least cost measures will necessitate a shift in the management, sale, and development of energy efficiency services. It is important

³⁶ <http://webserver.rilin.state.ri.us/PublicLaws/law18/law18079.htm>

to begin sending the correct signal to the Company to begin this shift in 2020 in order to prepare for the future. In this environment, it is essential that the shareholder incentive mechanism not create a financial disincentive for the Company to drive these changes.

The Company proposes incremental modifications to the 2019 shareholder incentive mechanism that better align company incentives with changing savings goals and evolving state policy goals. For the electric portfolio, the change in the shareholder incentive is two-fold: change from an annual to a lifetime savings goal and a change from electric MWh and kW goal to a net all-fuel savings (MMBtu) goal. For the natural gas portfolio, the change is from a goal of annual MMBtu to lifetime MMBtu. More is described in Section 2, above.

The change to lifetime savings for both the electric and natural gas portfolio will better align the Company's shareholder incentive with the maximization of customer, environmental, and system benefits. This change will encourage the Company to focus on the delivery of more comprehensive energy savings to provide the greatest value to customers. While this modification will better align the Company's portfolio with Rhode Island's policy goals, the shift to a lifetime, as opposed to annual, goal does introduce an incremental degree of difficulty as compared to the Company's achievement of annual savings goals for several reasons. First, measures with longer lifetimes typically have more intricate and custom installations at a home or business and that require multiple steps and considerations and require more time to complete. For example, the weatherization of a home delivers 20 years of savings and it takes multiple steps to get there. It begins with a home energy audit to measure and develop specifications for insulation, then a customer deciding to move forward, and scheduling a contractor at a convenient time and then a multi-day installation along with verification visits. The challenge that the lifetime goal creates is ensuring that these longer-lead projects have the participation levels, processes and customer ease to be completed within a calendar year. The Company will have to change its customer strategy, sales, and delivery practices to successfully achieve targets.

Second, the challenge that the lifetime savings goals create is that it removes the agility the Company has had in the past to meet savings goals with easier-to-install and shorter-life measures. If the Company is lagging in performance, it will no longer be able to rely on lighting flash sales or natural gas steam traps to make up performance. This reduction in the company's portfolio of options will reduce the Company's nimbleness in balancing savings portfolios in real-time with strategies to quickly procure additional savings. This will increase the difficulty in achieving planned goals. Given that this change will be difficult, it is necessary to ensure that Rhode Island maintains its leadership position in energy efficiency and can evolve as markets continue to transform.

The change to all-fuel MMBtu savings will remove the current disincentive to promote the strategic electrification of heating and measures that save delivered fuels. It will help to create the needed step change to move towards providing customers with an energy optimization approach that focuses on holistic opportunities to reduce overall energy use in a least-cost manner. It also more fully captures the net effect of all-fuel savings efforts (electric, oil, and propane), as well as the impact of fuel conversions that result in overall lower energy use. Delivering this holistic, total energy outcome will be a challenge for the Company because it places a new emphasis on all-fuel measures which are more complicated to deliver and require more sophisticated sales and delivery approaches than do measures such as lighting. This change also upends the past years of program delivery experience by changing the relative savings contribution of programs. Take EnergyWise Multi Family for example – in 2018, the Company under performed on the planned goals by achieving 67% of planned savings. The program has a relatively low impact on sector goals when measuring against Annual or Lifetime MWh. However, in the change to Lifetime MMBtu proposed in this plan, the relative contribution to savings quadruples because it delivers holistic savings for all-fuels. To successfully focus on optimization and holistic opportunities, the Company will have to change management strategies from the past.

Given the increased risks noted in this section, past performance will no longer be as reliable an indicator of Company ability to achieve committed savings goals. With the increased risk to performance, the Company proposes to earn a target based-incentive rate equal to 5.5% of the eligible spending budget in a program year for achieving lifetime MMBtu electric and gas energy savings goals.

- For electric savings, the Company can earn a target-based incentive rate equal to 5.5% of the eligible annual spending budget for achieving lifetime MMBtu savings goals.
- For gas, the Company can earn a target-based incentive rate equal to 5.5% of the eligible annual spending budget for achieving lifetime MMBtu savings goals.

Although the target Company's incentive is calculated as share of the annual spending budget, and not based on customer benefits, given the movement toward outcome and benefits-based incentives in Rhode Island, discussed in the next section, it is useful to consider that the proposed revision represents a very small increase in the percent of customer benefits retained by the Company. The Company would continue to retain only a very small percentage of the net benefits generated by its efficiency investments. For example, under the TRC Test, the target incentive for the electric portfolio under the traditional 5% of the annual spending budget amounts to 1.61% of benefits. This would increase to 1.77% under the proposed revision. The target incentive for the gas portfolio

under the traditional 5% rate amounts to 2.01% of benefits. This would increase to 2.21% under the proposed revision.

As in 2018 and 2019, the proposed incentive mechanism establishes an incentive of 1.25% of the annual spending budget for achieving 75% of the savings goals in a sector. This would increase linearly to 5.5% of the annual spending budget for achieving 100% and increase linearly from that point to 6.75% of the annual spending budget for achieving 125% of the savings goals.

Expressed mathematically, the shareholder incentive would be calculated as follows for both energy and demand savings, where SB is the Annual Spending Budget in the sector:

- From 75% of savings to 100% of savings:
 - Shareholder Incentive = $SB \times (1.25\% + (\% \text{ of Savings Achieved} - 75\%) \times 0.17)$
- From 100% of savings to 125% of savings:
 - Shareholder Incentive = $SB \times (5.50\% + (\% \text{ of Savings Achieved} - 100\%) \times 0.05)$

The Company believes that this structure will incent the Company to achieve savings that approach or exceed 100% of the annual goals. It does so by setting the threshold for savings required to earn an incentive at 75% of the annual savings goals, by creating a steep slope to earn a greater incentive in the range of 75% of savings to 100% of savings, by establishing the target incentive at 5.5% of the annual spending budget, and by offering a higher incentive for exceeding 100% of the annual goals.

The threshold performance level for energy savings by sector will be set at 75% of the lifetime energy and demand savings goal for the sector. The Company must attain at least this threshold level of savings in the sector before it can earn an incentive. The Company will have the ability to earn an incentive for each MMBtu saved, once threshold savings for the sector are achieved. The cap for the target incentive amount of energy savings will remain at 125%.

The ability to earn up to 125% of the target incentive is worthwhile because Rhode Island customers will realize additional energy and cost savings if the Company achieves a high level of energy savings performance. Given budget control requirements, this feature will provide the Company with an incentive to improve the efficiency of its program implementation efforts while providing Rhode Island customers with value in excess of the incremental incentive that may be earned by the Company. That is, the Company will have an incentive to increase customers' savings and customers will realize an overwhelming majority of the savings.

The savings goals are based on a set of assumptions of savings per measure and other impact factors in each program as well as the proposed budget. The determination of achieved savings will be based on the same set of savings and impact assumptions as is used to develop the savings goal in this Annual Plan. These assumptions have been reviewed and accepted by the Parties.

Attachment 5, Tables E-3 and Attachment 6, Table G-3 provide the derivations of the eligible electric spending budget that are used to determine the incentive amounts that the Company may earn if it is successful in achieving its goals for energy savings. Attachment 5, Table E-9 and Attachment 6, Table G-9 provide a summary of the incentives related to annual energy-savings goals by sector. These goals by sector reflect the expected cost of savings in each sector informed by evaluation studies, and these goals have been adjusted to take into account changing rebate policies and the changing market being served. As described above, these goals have been carefully reviewed by the Collaborative and EERMC representatives to ensure that they represent reasonable and challenging goals for the year.

For electric energy efficiency programs, the proposed target base-incentive rate in 2020 is equal to 5.5% of the eligible spending budget for 2020. The projected electric eligible spending budget for 2020 is approximately \$103.6 million (see Attachment 5, Table E-3). The total electric target incentive for 2020 is 5.5% of the proposed spending budget, or approximately \$5.69 million (see Attachment 5, Table E-9). In accordance with the Amended Settlement Agreement in Docket Nos. 4770 and 4780 filed with the PUC on August 10, 2018, the Company is not eligible to earn an energy efficiency incentive on its Energy Efficiency Demand Response Programs. To comply with this requirement, the Company excluded spending on Demand Response Programs from the eligible spending budget as shown in Table E-3.

For natural gas efficiency programs, the proposed target base incentive is equal to 5.5% of the eligible budget. The projected natural gas eligible spending budget for 2020 is approximately \$31.1 million (see Attachment 6, Table G-3). The total natural gas target incentive for 2020 is 5.5% of the proposed spending budget, or approximately \$1.71 million (see Attachment 6, Table G-9).

In addition, to promote cost efficiency in spending in the achievement of the energy savings goals, an adjustment will be made under certain circumstances to lifetime MMBtu savings goals in the shareholder incentive calculation. If the actual implementation expenses in a sector at year-end are less than the planned implementation expenses for that sector by more than five percent, and if achieved savings in the sector exceed 100% of the target savings goal, the savings goal for that sector will be adjusted by the ratio of actual implementation expenses to the planned implementation expenses. Conversely, if

the actual implementation expenses³⁷ in a sector at year-end are greater than the planned implementation expenses by more than five percent, and if achieved savings in the sector are less than 100% of the target savings goal, the savings goal for that sector will be adjusted by the ratio of actual implementation expenses to the planned implementation expenses.

The Company will report final program results and earned incentive in its Year-End Report regarding 2020 Energy Efficiency Program efforts.

b. Relationship of Proposed Modification to Future Performance Incentive Mechanisms in Rhode Island

The Company recognizes that there are ongoing conversations about how performance incentives will evolve in Rhode Island, most notably under Docket 4943, which aims to provide guidance and principles for performance incentive mechanisms in Rhode Island. The Company has provided comments on Commissioner Anthony's proposed principles. While the Company does not agree with all of the specific principles proposed in Commissioner Anthony's memo, the memo raises some broader priorities and considerations for performance incentive mechanisms in Rhode Island with which the Company is largely in agreement, including:

- rationalization of incentives across dockets, to avoid the potential for duplicative earning for a single outcome or action;
- avoiding differently sized incentives for the same action or outcome in different dockets;³⁸
- movement toward incentives focused on key outcomes and benefits, rather than actions or programs; and
- ensuring benefits of incentives exceed costs to customers and limit the risks to customers.

The Company believes that the proposed change to the shareholder incentive discussed above is consistent with these priorities. First, in shifting the outcome of focus to lifetime MMBtus, revised structure will remove a disincentive for the Company to pursue electrification of heat, and in doing so better align the Company's financial interest with Rhode Island's GHG goals. Second, the Company's proposed increase in the incentive size reflects a minimal increase in the share of benefits retained by the Company, while maximizing benefits to customers by sending a signal to prioritize the deployment of measures that create longer-term energy savings, and is reflective of the greater challenge associated with achieving lifetime savings targets relative to an annual target.

³⁷ Expenses related to overspending for deliverable fuels will be excluded from implementation expenses in this calculation.

³⁸ The Company did note in its comments on Commissioner Anthony's memo, however, that in certain circumstances, ancillary benefits might warrant differently sized incentives.

The Company believes that this proposal represents an important incremental step in moving toward broader outcome-based performance incentive mechanisms tied to customer benefits. The Company expects that the next Three-Year Plan will provide an opportunity to consider further changes to the shareholder incentive structure that align with the outcomes of Docket 4943, as well as the impacts of other relevant filings (e.g., AMF and GMP). The proposed change is not intended to set precedent for future iterations of performance incentive mechanisms.

15. Testing Performance Metrics

In the 2019 Annual Plan, the Company proposed tracking and reporting performance related to certain metrics in order to test progress towards several key objectives. The Company began testing and reporting out annual and lifetime carbon reductions resulting from investments in the electrification of heating and delivered fuels measures, lifetime MWh and MMBtu savings, program costs per energy savings, and a customer satisfaction metric. The Company continues to work towards tracking greenhouse gas equivalent savings (in carbon dioxide equivalents) resulting from all electric and natural gas measures. These efforts were to assist in collecting information in order to consider new performance metrics for future Annual Plans that would better align the plans with Rhode Island's goals for Power Sector Transformation and greenhouse gas emissions reduction.

The Company proposes to continue reporting out on these metrics with two changes from 2019 to 2020. Since the Company has proposed to move from Annual MWh and Annual kW to Lifetime all-fuel savings (MMBtu) for the electric portfolio and from Annual MMBtu for Lifetime MMBtu for the natural gas portfolio, the Company proposes to no longer track and report on lifetime MWh and MMBtu. In addition, since the move to all-fuel savings (MMBtu) will capture the energy savings from electrification of heating it is no longer necessary to track a carbon metric specific to these measures but will commit to reporting out on carbon savings at the program level.

The Company will provide updates on progress, challenges, and lessons learned with the Energy Efficiency Technical Working Group and the EERMC during 2020. While Company performance against a test metric may help inform future goals, it will not predetermine these goals. At the end of 2020, the Company, in consultation with the Division, OER, EERMC Consultants, the Collaborative, and the PST Advisory Group may determine that a metric is not appropriate for use in the future. The Company will work with the Division, OER, EERMC Consultants, and the Collaborative in the development of future baselines and financial rewards for any new annual goals resulting from these test metrics.

i. Program costs per energy savings

The Company currently includes the projected costs of lifetime electric and gas savings in its Annual Plans. The Company recently began including the actual costs of lifetime savings compared to planned values in its quarterly reports. In 2020, the Company will continue this reporting in its quarterly reports and will add this metric to its Year-End Report.

The Company will also report out on the cost of saved peak demand for the residential and C&I demand response programs. This metric will be important to track as these new program offerings scale up.

ii. Customer Satisfaction

The Company proposes to continue to track a Customer Satisfaction metric in 2020. Initially the metric will be applied to whole house programs with the potential to expand to other residential programs over time.

The Company proposes to utilize a third party vendor to conduct the customer survey. The metric would be based off customer responses to the following questions:

1. Would you recommend this program to a friend or family member?
2. How satisfied are you with the energy efficiency services received?

The Company will track customer responses and report out on the average satisfaction across.

The Company will detail progress on the above proposed metrics in its quarterly reports as well as a detailed summary of the results, lessons learned, and any needed improvements in its 2020 Year-End Report to the PUC.

16. Miscellaneous Provisions

- a. Other than as expressly stated herein, this Settlement establishes no principles and shall not be deemed to foreclose any party from making any contention in any future proceeding or investigation before the PUC.
- b. This Settlement is the product of settlement negotiations. The content of those negotiations is privileged and all offers of settlement shall be without prejudice to the position of any party.
- c. Other than as expressly stated herein, the approval of this Settlement by the PUC shall not in any way constitute a determination as to the merits of any issue in any other PUC proceeding.

